



The Lunar Crater Caper

Grade 5 math · Multiplication, Addition, Fractions of a number, Order of operations, Division · Reading level grades 3-4

Detective: _____ Date: _____

Someone snuck onto the Lunar Biosphere Outpost and grieved our main starship! They mined the thruster blocks and replaced them with slow-sand. We need to find the Griefing Astronaut before they escape to the Outer Rim!

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 Griefing Astronaut is _____

Possible suspects

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

NAME	SPACE ABILITY	CRAFTING GEAR	HELMET STATUS	ASTRONAUT HAIRCUT	STATION HAZARD
Ender Emily	Redstone Wiring	Laser Blasting	Visor Closed	Spiky Blue Hair	Water Buckets
Jeb Meteor	Ender Pearl Warping	Rocket Boosting	Visor Closed	Spiky Blue Hair	Obsidian Blocks
Notch Nebula	Ender Pearl Warping	Lava Bucketing	Visor Open	Glowing Orange Ponytail	Glowstone Dust
Stella Star	Ender Pearl Warping	Shield Generating	Visor Closed	Spiky Blue Hair	Obsidian Blocks
Pixel Paige	Diamond Pickaxe Mining	Shield Generating	Visor Closed	Spiky Blue Hair	Obsidian Blocks
Stampy Sun	Jetpack Hovering	Laser Blasting	Visor Open	Glowing Orange Ponytail	Glowstone Dust
Skeppy Saturn	Ender Pearl Warping	Shield Generating	Visor Open	Glowing Orange Ponytail	Glowstone Dust
Lava Luke	Diamond Pickaxe Mining	Lava Bucketing	Visor Closed	Spiky Blue Hair	Obsidian Blocks
Cosmo Cody	Redstone Wiring	Laser Blasting	Visor Closed	Neon Green Buzzcut	Obsidian Blocks
Alex Rocket	Ender Pearl Warping	Rocket Boosting	Visor Closed	Neon Green Buzzcut	Obsidian Blocks
Dan Gravity	Gravity Boot Jumping	Laser Blasting	Visor Closed	Neon Green Buzzcut	Water Buckets
Grian Galaxy	Redstone Wiring	Lava Bucketing	Visor Closed	Neon Green Buzzcut	Water Buckets
Steve Moonwalker	Redstone Wiring	Lava Bucketing	Visor Open	Neon Green Buzzcut	Glowstone Dust
Philza Pulsar	Jetpack Hovering	Laser Blasting	Visor Closed	Glowing Orange Ponytail	Obsidian Blocks
Ranboo Rover	Jetpack Hovering	Laser Blasting	Visor Closed	Neon Green Buzzcut	Glowstone Dust
Aphmau Astro	Diamond Pickaxe Mining	Shield Generating	Visor Open	Spiky Blue Hair	Obsidian Blocks
Preston Plasma	Redstone Wiring	Shield Generating	Visor Closed	Spiky Blue Hair	Obsidian Blocks
Mumbo Mars	Redstone Wiring	Shield Generating	Visor Open	Spiky Blue Hair	Water Buckets
Gavin Orbit	Ender Pearl Warping	Lava Bucketing	Visor Open	Neon Green Buzzcut	Obsidian Blocks
Sparklez Sol	Gravity Boot Jumping	Laser Blasting	Visor Open	Glowing Orange Ponytail	Water Buckets
Lizzie Lunar	Ender Pearl Warping	Rocket Boosting	Visor Closed	Glowing Orange Ponytail	Glowstone Dust

Multiplication facts (1-12)

We checked the launchpad storage crates. They were stacked in equal rows. We multiplied the rows to count the total chests and found our first lead.

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

The diagram consists of two rows of boxes. The top row has 15 boxes, and the bottom row has 12 boxes. The boxes are arranged in a grid-like structure. The top row has a 'T' symbol in the first box, and the bottom row has a 'T' symbol in the 10th box. The numbers in the boxes are as follows:

Row	Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7	Box 8	Box 9	Box 10	Box 11	Box 12	Box 13	Box 14	Box 15		
Top	T														T		
	7	22	132	35	72	40	40	120	72	1	27	25	132	14	1	25	7
Bottom																	
	15	14	132	40	120	35	120	36	15	81	44	132	7	14			

$1 \times 7 = \boxed{} \rightarrow \boxed{\mathbf{T}}$

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

$8 \times 9 = \boxed{} \rightarrow \boxed{1}$

$9 \times 9 = \boxed{} \rightarrow \boxed{\text{C}}$

$$5 \times 7 = \boxed{} \rightarrow \boxed{\mathbf{V}}$$

$$2 \times 7 = \boxed{} \rightarrow \boxed{\mathbf{S}}$$

$9 \times 3 = \square \rightarrow \boxed{\mathbf{D}}$

$5 \times 3 = \boxed{} \rightarrow \boxed{\text{U}}$

$$11 \times 4 = \boxed{} \rightarrow \boxed{\text{K}}$$

$11 \times 12 = \boxed{} \rightarrow \boxed{\mathbf{E}}$

$10 \times 12 = \boxed{} \rightarrow \boxed{\mathbf{A}}$

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

$$1 \times 1 = \boxed{} \rightarrow \boxed{\mathbf{N}}$$

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

$$3 \times 12 = \boxed{} \rightarrow \boxed{\mathbf{B}}$$

Scratch space:

CLUE 2 **Addition**

The guard added up the redstone blocks left in the generator room. This total sum unlocked the security log for our next clue.

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

W																
6433	6704	9798	7668	9798	6171	2998	7256	6151	6704	6704	8217	6171	2998	2686	6704	6171
2252	7668	6151	2998	8786												

$3403 + 3030 = \square \rightarrow \boxed{\text{W}}$

$2526 + 5142 = \square \rightarrow \boxed{\text{I}}$

$1080 + 1172 = \square \rightarrow \boxed{\text{V}}$

$833 + 1853 = \square \rightarrow \boxed{\text{P}}$

$3965 + 2739 = \square \rightarrow \boxed{\text{E}}$

$5117 + 3669 = \square \rightarrow \boxed{\text{R}}$

$4102 + 5696 = \square \rightarrow \boxed{\text{D}}$

$3104 + 5113 = \square \rightarrow \boxed{\text{A}}$

$3112 + 3039 = \square \rightarrow \boxed{\text{S}}$

$2852 + 3319 = \square \rightarrow \boxed{\text{N}}$

$1224 + 1774 = \square \rightarrow \boxed{\text{O}}$

$4429 + 2827 = \square \rightarrow \boxed{\text{T}}$

Scratch space:

CLUE 3

Fractions of a number

The solar panels were damaged. We calculated that a fraction of the twenty panels were broken, revealing a hidden file.

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

T													
29	3	36	5	18	36	5	4	36	8	5	25	18	31

18	22	27	32	8	32	19	37	22	4	18	34	20	27

$1/4 \text{ of } 116 = \square \rightarrow \boxed{\text{T}}$

$5/8 \text{ of } 32 = \square \rightarrow \boxed{\text{K}}$

$2/6 \text{ of } 57 = \square \rightarrow \boxed{\text{A}}$

$4/5 \text{ of } 40 = \square \rightarrow \boxed{\text{I}}$

$6/8 \text{ of } 36 = \square \rightarrow \boxed{\text{S}}$

$3/6 \text{ of } 72 = \square \rightarrow \boxed{\text{E}}$

$1/2 \text{ of } 44 = \square \rightarrow \boxed{\text{B}}$

$1/10 \text{ of } 50 = \square \rightarrow \boxed{\text{F}}$

$1/5 \text{ of } 185 = \square \rightarrow \boxed{\text{N}}$

$1/8 \text{ of } 24 = \square \rightarrow \boxed{\text{H}}$

$1/3 \text{ of } 75 = \square \rightarrow \boxed{\text{R}}$

$2/8 \text{ of } 32 = \square \rightarrow \boxed{\text{D}}$

$3/6 \text{ of } 36 = \square \rightarrow \boxed{\text{O}}$

$2/4 \text{ of } 62 = \square \rightarrow \boxed{\text{M}}$

$2/8 \text{ of } 136 = \square \rightarrow \boxed{\text{C}}$

$1/2 \text{ of } 8 = \square \rightarrow \boxed{\text{L}}$

Scratch space:

CLUE 4

Order of operations

We had to solve the engine startup code in the correct order to boot up the tracking radar. This gave us another hint.

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

B																		
72	66	60	51	67	52	33	21	12	52	45	6	17	76	52	76	76	67	51

45	38	51	6	51

$8 \times 10 - 8 = \square \rightarrow \text{B}$

$4 + 4 \times 2 = \square \rightarrow \text{W}$

$11 + 2 \times 3 = \square \rightarrow \text{O}$

$5 + 8 \times 2 = \square \rightarrow \text{R}$

$10 \times 9 - 24 = \square \rightarrow \text{L}$

$8 \times 11 - 28 = \square \rightarrow \text{U}$

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

$2 + 2 \times 2 = \square \rightarrow \text{N}$

$15 + 9 \times 2 = \square \rightarrow \text{I}$

$8 \times 8 - 19 = \square \rightarrow \text{S}$

$9 \times 8 - 20 = \square \rightarrow \text{A}$

$12 \times 8 - 29 = \square \rightarrow \text{H}$

$28 + 5 \times 2 = \square \rightarrow \text{C}$

$11 \times 8 - 12 = \square \rightarrow \text{T}$

Scratch space:

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

We split the emergency oxygen canisters equally among the space crew. The leftover canisters gave us the final clue.

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:

$27 \div 9 = \boxed{}$

$16 \div 4 = \boxed{}$

$108 \div 12 = \boxed{}$

$7 \div 1 = \boxed{}$

$24 \div 4 = \boxed{}$

$36 \div 3 = \boxed{}$

$110 \div 11 = \boxed{}$

$11 \div 1 = \boxed{}$

$64 \div 8 = \boxed{}$

$24 \div 12 = \boxed{}$

$35 \div 7 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain teleports instantly using an ender pearl, then activates a protective shield.
2. The villain digs rapidly with a diamond pickaxe, then hides the stolen loot in an ender chest.
3. The villain lays a trail of active redstone wiring, then activates a protective shield.
4. The villain digs rapidly with a diamond pickaxe, then activates a protective shield.
5. The villain hovers high with a noisy jetpack, then hides the stolen loot in an ender chest.
6. The villain teleports instantly using an ender pearl, then hides the stolen loot in an ender chest.
7. The villain digs rapidly with a diamond pickaxe, then blasts a path with a laser.
8. The villain digs rapidly with a diamond pickaxe, then pours down a scorching lava bucket.
9. The villain teleports instantly using an ender pearl, then zooms away using rocket boosters.
10. The villain jumps around using gravity boots, then blasts a path with a laser.
11. The villain digs rapidly with a diamond pickaxe, then zooms away using rocket boosters.
12. The villain lays a trail of active redstone wiring, then pours down a scorching lava bucket.

Answer Key

The Lunar Crater Caper

Culprit: Stella Star

Ender Pearl Warping · Shield Generating · Visor Closed · Spiky Blue Hair · Obsidian Blocks

Trail: Start 21 → Clue 1 16 → Clue 2 11 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE LAVA BUCKETS"

$1 \times 7 = 7$ (T) · $2 \times 11 = 22$ (H) · $8 \times 9 = 72$ (I) · $9 \times 9 = 81$ (C) · $5 \times 7 = 35$ (V) · $2 \times 7 = 14$ (S) · $9 \times 3 = 27$ (D) · $5 \times 3 = 15$ (U) · $11 \times 4 = 44$ (K) · $11 \times 12 = 132$ (E) · $10 \times 12 = 120$ (A) · $5 \times 5 = 25$ (O) · $1 \times 1 = 1$ (N) · $5 \times 8 = 40$ (L) · $3 \times 12 = 36$ (B)

Clue 2 (Addition): "WE DID NOT SEE AN OPEN VISOR"

$3403 + 3030 = 6433$ (W) · $2526 + 5142 = 7668$ (I) · $1080 + 1172 = 2252$ (V) · $833 + 1853 = 2686$ (P) · $3965 + 2739 = 6704$ (E) · $5117 + 3669 = 8786$ (R) · $4102 + 5696 = 9798$ (D) · $3104 + 5113 = 8217$ (A) · $3112 + 3039 = 6151$ (S) · $2852 + 3319 = 6171$ (N) · $1224 + 1774 = 2998$ (O) · $4429 + 2827 = 7256$ (T)

Clue 3 (Fractions of a number): "THE FOE FLED FROM OBSIDIAN BLOCKS"

$1/4$ of 116 = 29 (T) · $5/8$ of 32 = 20 (K) · $2/6$ of 57 = 19 (A) · $4/5$ of 40 = 32 (I) · $6/8$ of 36 = 27 (S) · $3/6$ of 72 = 36 (E) · $1/2$ of 44 = 22 (B) · $1/10$ of 50 = 5 (F) · $1/5$ of 185 = 37 (N) · $1/8$ of 24 = 3 (H) · $1/3$ of 75 = 25 (R) · $2/8$ of 32 = 8 (D) · $3/6$ of 36 = 18 (O) · $2/4$ of 62 = 31 (M) · $2/8$ of 136 = 34 (C) · $1/2$ of 8 = 4 (L)

Clue 4 (Order of operations): "BLUE HAIR WAS NOT AT THE SCENE"

$8 \times 10 - 8 = 72$ (B) · $4 + 4 \times 2 = 12$ (W) · $11 + 2 \times 3 = 17$ (O) · $5 + 8 \times 2 = 21$ (R) · $10 \times 9 - 24 = 66$ (L) · $8 \times 11 - 28 = 60$ (U) · $2 + 7 \times 7 = 51$ (E) · $2 + 2 \times 2 = 6$ (N) · $15 + 9 \times 2 = 33$ (I) · $8 \times 8 - 19 = 45$ (S) · $9 \times 8 - 20 = 52$ (A) · $12 \times 8 - 29 = 67$ (H) · $28 + 5 \times 2 = 38$ (C) · $11 \times 8 - 12 = 76$ (T)

Clue 5 (Division facts (1-12)): surviving statement is box 1 → Stella Star

$27 \div 9 = 3$ · $16 \div 4 = 4$ · $108 \div 12 = 9$ · $7 \div 1 = 7$ · $24 \div 4 = 6$ · $36 \div 3 = 12$ · $110 \div 11 = 10$ · $11 \div 1 = 11$ · $64 \div 8 = 8$ · $24 \div 12 = 2$ · $35 \div 7 = 5$