The Great Lunar Sabotage

Grade 6 math · Percentages, Exponents, Order of operations, Multiplication, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

The ultra-rare Star-Core Drive has been snatched from the high-tech vault at Lunar Outpost Delta! We need to scan the suspect files and narrow down the clues before the culprit leaves orbit.

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 Saboteur is _____

Possible suspects

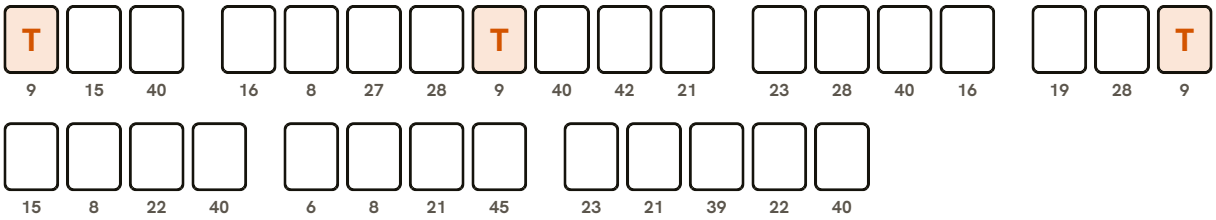
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	SPACESUIT GEAR	THRUSTER MODIFICATION	WRIST COMPUTER SIDE	HELMET GLOW COLOR	SYSTEM VULNERABILITY
Neil Armstrong	Plasma Torch	Ion Boosters	Left Wrist Screen	Bright Green Glow	Stardust Jamming
James Webb	Plasma Torch	Proton Shield	Right Wrist Screen	Bright Green Glow	Magnet Interference
Arthur Eddington	Laser Welder	Comet Tail Spark	Left Wrist Screen	Neon Blue Glow	Magnet Interference
Alan Shepard	Plasma Torch	Solar Sails	Right Wrist Screen	Bright Green Glow	Solar Flare Wave
Guion Bluford	Scanning Visor	Proton Shield	Left Wrist Screen	Bright Green Glow	Magnet Interference
Stephen Hawking	Plasma Torch	Ion Boosters	Right Wrist Screen	Bright Green Glow	Magnet Interference
Kalpana Chawla	Gravity Boots	Ion Boosters	Left Wrist Screen	Bright Green Glow	Magnet Interference
Sunita Williams	Gravity Boots	Proton Shield	Right Wrist Screen	Neon Blue Glow	Solar Flare Wave
Valentina Tereshkova	Plasma Torch	Warp Drive	Left Wrist Screen	Bright Green Glow	Magnet Interference
Michael Collins	Laser Welder	Comet Tail Spark	Right Wrist Screen	Solar Orange Glow	Stardust Jamming
John Glenn	Gravity Boots	Comet Tail Spark	Left Wrist Screen	Neon Blue Glow	Magnet Interference
Ellen Ochoa	Plasma Torch	Proton Shield	Left Wrist Screen	Bright Green Glow	Solar Flare Wave
Mae Jemison	Laser Welder	Proton Shield	Right Wrist Screen	Bright Green Glow	Stardust Jamming
Carl Sagan	Laser Welder	Comet Tail Spark	Left Wrist Screen	Solar Orange Glow	Stardust Jamming
Vera Rubin	Jetpack Pack	Ion Boosters	Right Wrist Screen	Bright Green Glow	Magnet Interference
Edwin Hubble	Plasma Torch	Ion Boosters	Right Wrist Screen	Solar Orange Glow	Magnet Interference
Yuri Gagarin	Scanning Visor	Proton Shield	Right Wrist Screen	Neon Blue Glow	Stardust Jamming
Buzz Aldrin	Plasma Torch	Warp Drive	Left Wrist Screen	Neon Blue Glow	Stardust Jamming
Sally Ride	Plasma Torch	Comet Tail Spark	Left Wrist Screen	Solar Orange Glow	Magnet Interference
Charles Bolden	Jetpack Pack	Ion Boosters	Left Wrist Screen	Bright Green Glow	Magnet Interference
Scott Kelly	Jetpack Pack	Comet Tail Spark	Left Wrist Screen	Bright Green Glow	Magnet Interference

CLUE 1 Percentages

> The outpost main solar array is online, but the security file is only partially downloaded. Check the progress percentage on the monitor to crack the first clue!

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



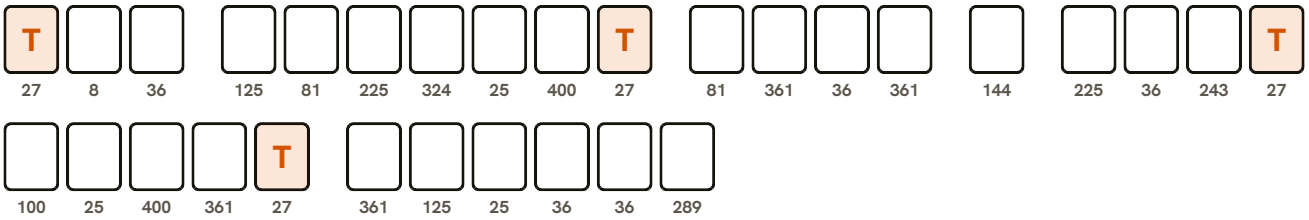
75% of 12 = ☐ → T	60% of 25 = ☐ → H	60% of 35 = ☐ → R
5% of 560 = ☐ → O	40% of 20 = ☐ → A	10% of 450 = ☐ → P
10% of 60 = ☐ → W	50% of 54 = ☐ → B	10% of 230 = ☐ → D
50% of 32 = ☐ → S	20% of 195 = ☐ → I	20% of 200 = ☐ → E
50% of 44 = ☐ → V	5% of 380 = ☐ → N	75% of 56 = ☐ → U

Scratch space:

CLUE 2 Exponents

> Our deep-space radar sends pulses that double with every mile of distance. Solve the power-of-two exponent puzzle to map the signal and find the next clue.

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



3^3 = ☐ → T

3^5 = ☐ → F

2^3 = ☐ → H

5^2 = ☐ → R

9^2 = ☐ → U

10^2 = ☐ → W

19^2 = ☐ → S

6^2 = ☐ → E

17^2 = ☐ → N

18^2 = ☐ → P

15^2 = ☐ → L

12^2 = ☐ → A

5^3 = ☐ → C

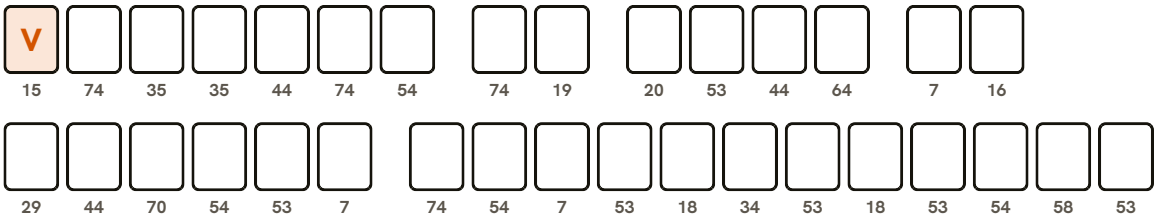
20^2 = ☐ → I

Scratch space:

CLUE 3 Order of operations

To open the sealed hangar door, we must enter the secret master code. Work out the math in the correct order of operations to bypass the security lock.

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



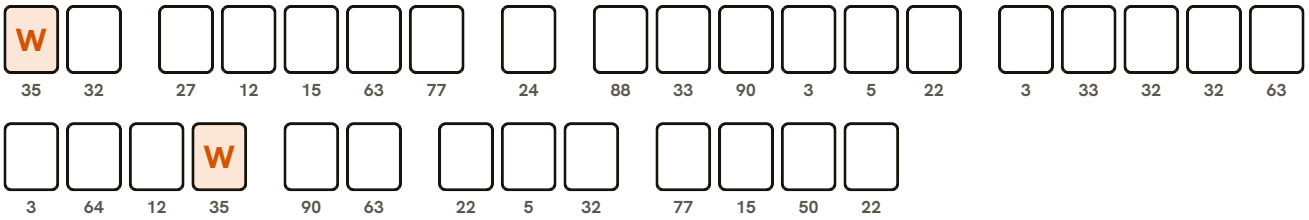
5 × 5 - 10 = ☐ → V	14 + 3 × 5 = ☐ → M	35 + 9 × 2 = ☐ → E
11 + 3 × 8 = ☐ → L	10 × 10 - 26 = ☐ → I	6 + 2 × 6 = ☐ → R
9 × 4 - 20 = ☐ → O	11 × 5 - 11 = ☐ → A	25 + 5 × 9 = ☐ → G
43 + 3 × 5 = ☐ → C	10 × 8 - 16 = ☐ → K	4 × 9 - 29 = ☐ → T
4 + 2 × 8 = ☐ → W	9 × 8 - 18 = ☐ → N	8 × 7 - 22 = ☐ → F
4 + 5 × 3 = ☐ → S		

Scratch space:

CLUE 4 Multiplication facts (1-12)

> The storage bay contains crates stacked in equal rows across the floor. Multiply the rows of gear to find the hidden scanner readings.

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



7 × 5 = ☐ → W	10 × 9 = ☐ → I	11 × 3 = ☐ → R	
9 × 7 = ☐ → N	1 × 3 = ☐ → G	5 × 1 = ☐ → H	11 × 8 = ☐ → B
2 × 11 = ☐ → T	9 × 3 = ☐ → F	10 × 5 = ☐ → S	
6 × 4 = ☐ → A	4 × 8 = ☐ → E	7 × 11 = ☐ → D	5 × 3 = ☐ → U
8 × 8 = ☐ → L	1 × 12 = ☐ → O		

Scratch space:

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

> We need to distribute the backup energy packs evenly among the patrol ships. Complete the division to share the power and reveal the final trace of the suspect.

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:

80 ÷ 8 = ☐	28 ÷ 4 = ☐	5 ÷ 1 = ☐	48 ÷ 4 = ☐	16 ÷ 2 = ☐
20 ÷ 10 = ☐	5 ÷ 5 = ☐	99 ÷ 9 = ☐	3 ÷ 1 = ☐	8 ÷ 2 = ☐
60 ÷ 10 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain disables the oxygen flow, then hides inside the cargo bay.
2. The villain reverses the artificial gravity, then zooms away on a space scooter.
3. The villain scrambles the navigation computer, then jumps into the hyper-launch tube.
4. The villain drains the main battery cells, then escapes through the maintenance hatch.
5. The villain locks down the airlock system, then jumps into the hyper-launch tube.
6. The villain reverses the artificial gravity, then flies off toward the asteroid belt.
7. The villain drains the main battery cells, then flies off toward the asteroid belt.
8. The villain reverses the artificial gravity, then jumps into the hyper-launch tube.
9. The villain disables the oxygen flow, then escapes through the maintenance hatch.
10. The villain locks down the airlock system, then escapes through the maintenance hatch.
11. The villain scrambles the navigation computer, then escapes through the maintenance hatch.
12. The villain drains the main battery cells, then zooms away on a space scooter.

TEACHER / PARENT

Answer Key

The Great Lunar Sabotage

Culprit: Kalpana Chawla

Gravity Boots · Ion Boosters · Left Wrist Screen · Bright Green Glow · Magnet Interference

Trail: Start 21 → Clue 1 19 → Clue 2 10 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Percentages): "THE SABOTEUR DOES NOT HAVE WARP DRIVE"

75% of 12 = 9 (T) · 60% of 25 = 15 (H) · 60% of 35 = 21 (R) · 5% of 560 = 28 (O) · 40% of 20 = 8 (A) · 10% of 450 = 45 (P) · 10% of 60 = 6 (W) · 50% of 54 = 27 (B) · 10% of 230 = 23 (D) · 50% of 32 = 16 (S) · 20% of 195 = 39 (I) · 20% of 200 = 40 (E) · 50% of 44 = 22 (V) · 5% of 380 = 19 (N) · 75% of 56 = 42 (U)

Clue 2 (Exponents): "THE CULPRIT USES A LEFT WRIST SCREEN"

3^3 = 27 (T) · 3^5 = 243 (F) · 2^3 = 8 (H) · 5^2 = 25 (R) · 9^2 = 81 (U) · 10^2 = 100 (W) · 19^2 = 361 (S) · 6^2 = 36 (E) · 17^2 = 289 (N) · 18^2 = 324 (P) · 15^2 = 225 (L) · 12^2 = 144 (A) · 5^3 = 125 (C) · 20^2 = 400 (I)

Clue 3 (Order of operations): "VILLAIN IS WEAK TO MAGNET INTERFERENCE"

5 × 5 - 10 = 15 (V) · 14 + 3 × 5 = 29 (M) · 35 + 9 × 2 = 53 (E) · 11 + 3 × 8 = 35 (L) · 10 × 10 - 26 = 74 (I) · 6 + 2 × 6 = 18 (R) · 9 × 4 - 20 = 16 (O) · 11 × 5 - 11 = 44 (A) · 25 + 5 × 9 = 70 (G) · 43 + 3 × 5 = 58 (C) · 10 × 8 - 16 = 64 (K) · 4 × 9 - 29 = 7 (T) · 4 + 2 × 8 = 20 (W) · 9 × 8 - 18 = 54 (N) · 8 × 7 - 22 = 34 (F) · 4 + 5 × 3 = 19 (S)

Clue 4 (Multiplication facts (1-12)): "WE FOUND A BRIGHT GREEN GLOW IN THE DUST"

7 × 5 = 35 (W) · 10 × 9 = 90 (I) · 11 × 3 = 33 (R) · 9 × 7 = 63 (N) · 1 × 3 = 3 (G) · 5 × 1 = 5 (H) · 11 × 8 = 88 (B) · 2 × 11 = 22 (T) · 9 × 3 = 27 (F) · 10 × 5 = 50 (S) · 6 × 4 = 24 (A) · 4 × 8 = 32 (E) · 7 × 11 = 77 (D) · 5 × 3 = 15 (U) · 8 × 8 = 64 (L) · 1 × 12 = 12 (O)

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

80 ÷ 8 = 10 · 28 ÷ 4 = 7 · 5 ÷ 1 = 5 · 48 ÷ 4 = 12 · 16 ÷ 2 = 8 · 20 ÷ 10 = 2 · 5 ÷ 5 = 1 · 99 ÷ 9 = 11 · 3 ÷ 1 = 3 · 8 ÷ 2 = 4 · 60 ÷ 10 = 6