



The Moonbase Sabotage

Grade 3 math · Rounding, Multiplication, Word problems, Place value, Division · Reading level grades 3-4

Detective: _____ Date: _____

A sneaky space pirate has sneaked into Lunar Outpost Alpha and tampered with the core systems! Commander Nova needs your detective skills to decode the clues and identify the intruder.

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 pirate is _____

Possible suspects

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

NAME	GEAR TOOL	EQUIPMENT	DOMINANT HAND	HAIRSTYLE	WEAKNESS
Kalpana Chawla	Gravity Boots	Star Map	Left Handed	Buzz Cut	Cold Vacuum
Ellen Ochoa	Force Shield	Star Map	Left Handed	Buzz Cut	Cold Vacuum
Yuri Gagarin	Plasma Torch	Solar Panel	Left Handed	Helmet Hair	Bright Light
Chris Hadfield	Laser Cutter	Probe Drone	Right Handed	Ponytail	Magnet Blast
Victor Glover	Gravity Boots	Solar Panel	Right Handed	Buzz Cut	Bright Light
Stephanie Wilson	Jetpack	Radio Beacon	Right Handed	Ponytail	Magnet Blast
Sunita Williams	Plasma Torch	Star Map	Right Handed	Helmet Hair	Cold Vacuum
Scott Kelly	Plasma Torch	Probe Drone	Left Handed	Ponytail	Magnet Blast
Leland Melvin	Plasma Torch	Oxygen Tank	Left Handed	Buzz Cut	Bright Light
Bernard Harris	Gravity Boots	Solar Panel	Right Handed	Buzz Cut	Magnet Blast
Neil Armstrong	Force Shield	Solar Panel	Right Handed	Buzz Cut	Bright Light
Valentina Tereshkova	Jetpack	Probe Drone	Right Handed	Ponytail	Bright Light
Alan Shepard	Force Shield	Radio Beacon	Left Handed	Ponytail	Magnet Blast
John Glenn	Jetpack	Oxygen Tank	Right Handed	Ponytail	Magnet Blast
Eileen Collins	Force Shield	Star Map	Right Handed	Ponytail	Magnet Blast
Sally Ride	Force Shield	Probe Drone	Right Handed	Ponytail	Magnet Blast
Guy Bluford	Gravity Boots	Probe Drone	Right Handed	Ponytail	Cold Vacuum
Michael Collins	Plasma Torch	Radio Beacon	Right Handed	Buzz Cut	Cold Vacuum
Christina Koch	Gravity Boots	Star Map	Right Handed	Ponytail	Cold Vacuum
Jeanette Epps	Plasma Torch	Oxygen Tank	Right Handed	Ponytail	Bright Light
Samantha Cristoforetti	Jetpack	Star Map	Left Handed	Helmet Hair	Cold Vacuum

CLUE 1

The radar scanner rounded the distance readout to the nearest ten to pinpoint the target.

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

A number line from 0 to 10,000. The line is marked with the following numbers in boxes: 30, 40, 200, 6000, 80, 6000, 7000, 200, 20, 30, 60, 4000, 200, 6000, 2000, 4000, 30. The number 30 is highlighted in orange in two locations.

Round 27 to the nearest ten $\rightarrow$ **T**

Round 4,741 to the nearest thousand → **A**

Round 8,390 to the nearest thousand → **B**

Round 39 to the nearest ten $\rightarrow$ **H**

Round 83 to the nearest ten $\rightarrow$ **U**

Round 7,167 to the nearest thousand $\rightarrow$ **P**

Round 20 to the nearest ten $\rightarrow$ **C**

Round 867 to the nearest hundred $\rightarrow$ **V**

Round 6,395 to the nearest thousand → **S**

Round 1,588 to the nearest thousand → **N**

Round 4,095 to the nearest thousand →

Round 61 to the nearest ten → **D**

Round 318 to the nearest hundred $\rightarrow$

Round 86 to the nearest ten $\rightarrow$ **R**

Round 181 to the nearest hundred → **E**

Scratch space:

CLUE 2

Multiplication facts (1-12)

We inspected the storage bay where supply modules were lined up in equal rows across the room.

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

T						T						T						
3	45	121	66	42	42	3	11	15	80	21	3	25	25	45	42	99	7	

				T									T		
15	80	8	45	3	45	7	21	64	121	64	25	3	121	11	

$3 \times 1 = \square \rightarrow \boxed{\text{T}}$

$9 \times 11 = \square \rightarrow \boxed{\text{W}}$

$8 \times 8 = \square \rightarrow \boxed{\text{D}}$

$5 \times 3 = \square \rightarrow \boxed{\text{R}}$

$1 \times 11 = \square \rightarrow \boxed{\text{P}}$

$2 \times 4 = \square \rightarrow \boxed{\text{G}}$

$1 \times 7 = \square \rightarrow \boxed{\text{A}}$

$5 \times 5 = \square \rightarrow \boxed{\text{S}}$

$5 \times 9 = \square \rightarrow \boxed{\text{H}}$

$11 \times 6 = \square \rightarrow \boxed{\text{F}}$

$3 \times 7 = \square \rightarrow \boxed{\text{N}}$

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

$6 \times 7 = \square \rightarrow \boxed{\text{O}}$

$8 \times 10 = \square \rightarrow \boxed{\text{I}}$

Scratch space:

CLUE 3

Word problems

The flight engineer needed help calculating the total gear inventory for the launch.

Solve each problem, then write its letter in the boxes to fill in the missing word.

Someone scared the villain off with M L S .

66 61 76 33 14 60 12 61 60

Astronaut lined up 11 rows of 6 laser grid. How many laser grid in all?

Answer: → M

Astronaut lined up 6 rows of 10 moon rock. How many moon rock in all?

Answer: → T

Astronaut found 30 oxygen tank yesterday and 3 more today. How many oxygen tank in all?

Answer: → N

Astronaut lined up 4 rows of 3 laser grid. How many laser grid in all?

Answer: → B

Astronaut found 30 laser grid yesterday and 31 more today. How many laser grid in all?

Answer: → A

Astronaut found 66 laser grid yesterday and 10 more today. How many laser grid in all?

Answer: → G

Astronaut lined up 7 rows of 2 oxygen tank. How many oxygen tank in all?

Answer: → E

Scratch space:

CLUE 4 Place value

The airlock keypad flashed a number in the hundreds place to give us a clue.

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

A				A				A									A
8000	60	40	20	8000	500	30	4000	8000	60	40	900	70	30	900	500	8000	

						A		
2000	3000	4000	700	3000	500	1000	40	8000

What is the value of the 8 in 8,646? → **A**

What is the value of the 6 in 360? → **S**

What is the value of the 7 in 732? → **P**

What is the value of the 7 in 9,178? → **E**

What is the value of the 4 in 948? → **T**

What is the value of the 2 in 7,321? → **R**

What is the value of the 4 in 4,215? → **W**

What is the value of the 1 in 61,963? → **Y**

What is the value of the 9 in 947? → **I**

What is the value of the 5 in 4,564? → **N**

What is the value of the 3 in 438? → **D**

What is the value of the 2 in 2,651? → **L**

What is the value of the 3 in 53,694? → **O**

Scratch space:

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

We split the remaining fuel canisters equally among the crew to keep the station running.

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:

$6 \div 1 = \boxed{}$

$9 \div 3 = \boxed{}$

$32 \div 8 = \boxed{}$

$8 \div 8 = \boxed{}$

$110 \div 11 = \boxed{}$

$14 \div 2 = \boxed{}$

$54 \div 6 = \boxed{}$

$18 \div 9 = \boxed{}$

$55 \div 5 = \boxed{}$

$15 \div 3 = \boxed{}$

$64 \div 8 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain cut the emergency power, then scrambled the ship radio.
2. The villain cut the emergency power, then stole the stellar map.
3. The villain shut down the magnetic shield, then jammed the solar array.
4. The villain cut the emergency power, then drained the backup fuel.
5. The villain shut down the magnetic shield, then scrambled the ship radio.
6. The villain sliced the fuel pipes, then swiped the moon crystals.
7. The villain shut down the magnetic shield, then stole the stellar map.
8. The villain zapped the main console, then stole the stellar map.
9. The villain zapped the main console, then jammed the solar array.
10. The villain sliced the fuel pipes, then stole the stellar map.
11. The villain blasted the airlock door, then jammed the solar array.
12. The villain shut down the magnetic shield, then swiped the moon crystals.

Answer Key

The Moonbase Sabotage

Culprit: Sally Ride

Force Shield · Probe Drone · Right Handed · Ponytail · Magnet Blast

Trail: Start 21 → Clue 1 18 → Clue 2 12 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE SUSPECT DOES NOT HAVE A RADIO BEACON"

Round 27 to the nearest ten = 30 (T) · Round 4,741 to the nearest thousand = 5000 (A) · Round 8,390 to the nearest thousand = 8000 (B) · Round 39 to the nearest ten = 40 (H) · Round 83 to the nearest ten = 80 (U) · Round 7,167 to the nearest thousand = 7000 (P) · Round 20 to the nearest ten = 20 (C) · Round 867 to the nearest hundred = 900 (V) · Round 6,395 to the nearest thousand = 6000 (S) · Round 1,588 to the nearest thousand = 2000 (N) · Round 4,095 to the nearest thousand = 4000 (O) · Round 61 to the nearest ten = 60 (D) · Round 318 to the nearest hundred = 300 (I) · Round 86 to the nearest ten = 90 (R) · Round 181 to the nearest hundred = 200 (E)

Clue 2 (Multiplication facts (1-12)): "THE FOOTPRINTS SHOW A RIGHT HANDED STEP"

$3 \times 1 = 3$ (T) · $9 \times 11 = 99$ (W) · $8 \times 8 = 64$ (D) · $5 \times 3 = 15$ (R) · $1 \times 11 = 11$ (P) · $2 \times 4 = 8$ (G) · $1 \times 7 = 7$ (A) · $5 \times 5 = 25$ (S) · $5 \times 9 = 45$ (H) · $11 \times 6 = 66$ (F) · $3 \times 7 = 21$ (N) · $11 \times 11 = 121$ (E) · $6 \times 7 = 42$ (O) · $8 \times 10 = 80$ (I)

Clue 3 (Word problems): "MAGNET BLAST"

Astronaut lined up 11 rows of 6 laser grid. How many laser grid in all? = 66 (M) · Astronaut lined up 6 rows of 10 moon rock. How many moon rock in all? = 60 (T) · Astronaut found 30 oxygen tank yesterday and 3 more today. How many oxygen tank in all? = 33 (N) · Astronaut lined up 4 rows of 3 laser grid. How many laser grid in all? = 12 (B) · Astronaut found 30 laser grid yesterday and 31 more today. How many laser grid in all? = 61 (A) · Astronaut found 66 laser grid yesterday and 10 more today. How many laser grid in all? = 76 (G) · Astronaut lined up 7 rows of 2 oxygen tank. How many oxygen tank in all? = 14 (E)

Clue 4 (Place value): "A STRAND WAS TIED IN A LOW PONYTAIL"

What is the value of the 8 in 8,646? = 8000 (A) · What is the value of the 6 in 360? = 60 (S) · What is the value of the 7 in 732? = 700 (P) · What is the value of the 7 in 9,178? = 70 (E) · What is the value of the 4 in 948? = 40 (T) · What is the value of the 2 in 7,321? = 20 (R) · What is the value of the 4 in 4,215? = 4000 (W) · What is the value of the 1 in 61,963? = 1000 (Y) · What is the value of the 9 in 947? = 900 (I) · What is the value of the 5 in 4,564? = 500 (N) · What is the value of the 3 in 438? = 30 (D) · What is the value of the 2 in 2,651? = 2000 (L) · What is the value of the 3 in 53,694? = 3000 (O)

Clue 5 (Division facts (1-12)): surviving statement is box 12 → Sally Ride

$6 \div 1 = 6$ · $9 \div 3 = 3$ · $32 \div 8 = 4$ · $8 \div 8 = 1$ · $110 \div 11 = 10$ · $14 \div 2 = 7$ · $54 \div 6 = 9$ · $18 \div 9 = 2$ · $55 \div 5 = 11$ · $15 \div 3 = 5$ · $64 \div 8 = 8$