The Case of the Missing Moon Trophy

Grade 4 math · Place value, Addition, Subtraction, Multiplication, Division · Reading level grades 1-2

Detective: _____ **Date:** _____

Oh no! Someone swiped the Golden Space Trophy from Starlight Station! The suspect left behind strange clues. Use your math skills to help the Astro Rangers solve the mystery!

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

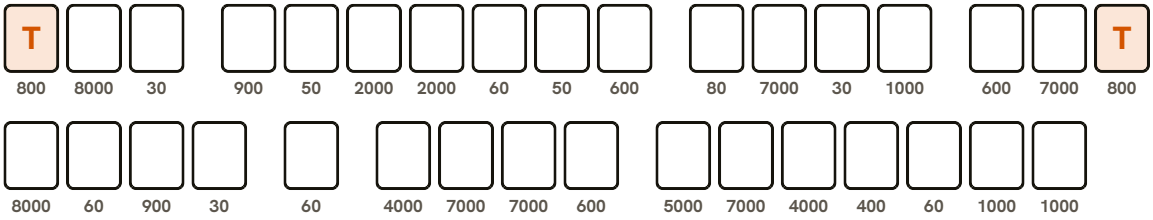
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	PRIMARY GEAR	SECONDARY TOOL	DOMINANT HAND	HAIR COLOR	VULNERABILITY
Jessica Meir	JET PACK	COMM RADIO	LEFT HANDED	SILVER GRAY HAIR	MAGNET TRAP
Story Musgrave	SHIELD BELT	RAY BLASTER	LEFT HANDED	SILVER GRAY HAIR	SONIC ALARM
Peggy Whitson	GRAVITY BOOTS	RAY BLASTER	RIGHT HANDED	SILVER GRAY HAIR	FLASH LIGHT
Jim Lovell	SCOUT DRONE	MOON COMPASS	LEFT HANDED	SILVER GRAY HAIR	MAGNET TRAP
Kalpana Chawla	JET PACK	RAY BLASTER	LEFT HANDED	SILVER GRAY HAIR	MAGNET TRAP
Yuri Gagarin	SHIELD BELT	METEOR SCOOP	LEFT HANDED	BRIGHT GREEN HAIR	MAGNET TRAP
Guion Bluford	GRAVITY BOOTS	METEOR SCOOP	LEFT HANDED	SILVER GRAY HAIR	MAGNET TRAP
Buzz Aldrin	LASER RING	MOON COMPASS	LEFT HANDED	BRIGHT GREEN HAIR	SONIC ALARM
Alan Shepard	LASER RING	MOON COMPASS	LEFT HANDED	SILVER GRAY HAIR	MAGNET TRAP
Gene Cernan	SHIELD BELT	RAY BLASTER	RIGHT HANDED	BRIGHT GREEN HAIR	FLASH LIGHT
Jeanette Epps	LASER RING	STAR MAP	RIGHT HANDED	NEON BLUE HAIR	MAGNET TRAP
Mae Jemison	SCOUT DRONE	METEOR SCOOP	RIGHT HANDED	SILVER GRAY HAIR	MAGNET TRAP
Neil Armstrong	JET PACK	MOON COMPASS	LEFT HANDED	BRIGHT GREEN HAIR	FLASH LIGHT
Bernard Harris	JET PACK	RAY BLASTER	LEFT HANDED	NEON BLUE HAIR	SONIC ALARM
Christina Koch	JET PACK	METEOR SCOOP	RIGHT HANDED	NEON BLUE HAIR	FLASH LIGHT
Chris Hadfield	JET PACK	STAR MAP	RIGHT HANDED	SILVER GRAY HAIR	MAGNET TRAP
Fred Haise	SHIELD BELT	METEOR SCOOP	LEFT HANDED	SILVER GRAY HAIR	MAGNET TRAP
John Glenn	GRAVITY BOOTS	STAR MAP	LEFT HANDED	BRIGHT GREEN HAIR	SONIC ALARM
Michael Collins	GRAVITY BOOTS	METEOR SCOOP	RIGHT HANDED	SILVER GRAY HAIR	SONIC ALARM
Victor Glover	SHIELD BELT	RAY BLASTER	LEFT HANDED	NEON BLUE HAIR	FLASH LIGHT
Ellen Ochoa	SHIELD BELT	MOON COMPASS	LEFT HANDED	NEON BLUE HAIR	SONIC ALARM

CLUE 1 Place value

The star station computer screen blinks with place value numbers to unlock Clue One.

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



What is the value of the 8 in 2,863? ☐ → **T**

What is the value of the 1 in 51,484? ☐ → **S**

What is the value of the 9 in 952? ☐ → **V**

What is the value of the 3 in 430? ☐ → **E**

What is the value of the 2 in 92,350? ☐ → **L**

What is the value of the 6 in 602? ☐ → **N**

What is the value of the 8 in 8,025? ☐ → **H**

What is the value of the 7 in 17,152? ☐ → **O**

What is the value of the 5 in 4,259? ☐ → **I**

What is the value of the 4 in 1,487? ☐ → **P**

What is the value of the 5 in 15,096? ☐ → **C**

What is the value of the 4 in 64,919? ☐ → **M**

What is the value of the 8 in 485? ☐ → **D**

What is the value of the 6 in 4,064? ☐ → **A**

Scratch space:

CLUE 2 Addition

Cadet Leo adds up the energy crystals in the storage bay to reveal Clue Two.

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



1129 + 1450 = ☐ → T

3940 + 4236 = ☐ → U

2602 + 6063 = ☐ → K

1735 + 2187 = ☐ → D

4219 + 2686 = ☐ → Y

1262 + 1734 = ☐ → A

3853 + 3293 = ☐ → E

3844 + 5303 = ☐ → N

2030 + 894 = ☐ → R

3748 + 4547 = ☐ → F

3529 + 5817 = ☐ → C

2206 + 4081 = ☐ → L

959 + 1410 = ☐ → I

5291 + 2631 = ☐ → H

2240 + 1992 = ☐ → P

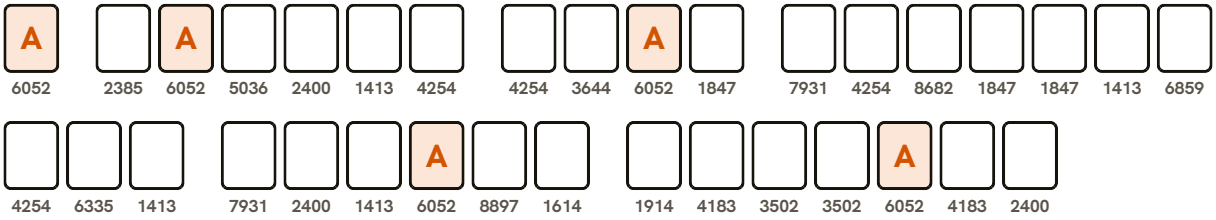
1604 + 2549 = ☐ → S

Scratch space:

CLUE 3 Subtraction

Cadet Maya subtracts the broken oxygen tanks from the total to find Clue Three.

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



8880 - 2828 = ☐ → A

5935 - 2291 = ☐ → R

9520 - 3185 = ☐ → H

7160 - 2906 = ☐ → T

12226 - 3329 = ☐ → K

5094 - 3681 = ☐ → E

5971 - 1788 = ☐ → I

4813 - 2413 = ☐ → N

6519 - 4672 = ☐ → P

5005 - 2620 = ☐ → M

11006 - 3075 = ☐ → S

5678 - 4064 = ☐ → Y

3562 - 1648 = ☐ → V

7049 - 2013 = ☐ → G

8623 - 1764 = ☐ → D

11643 - 2961 = ☐ → O

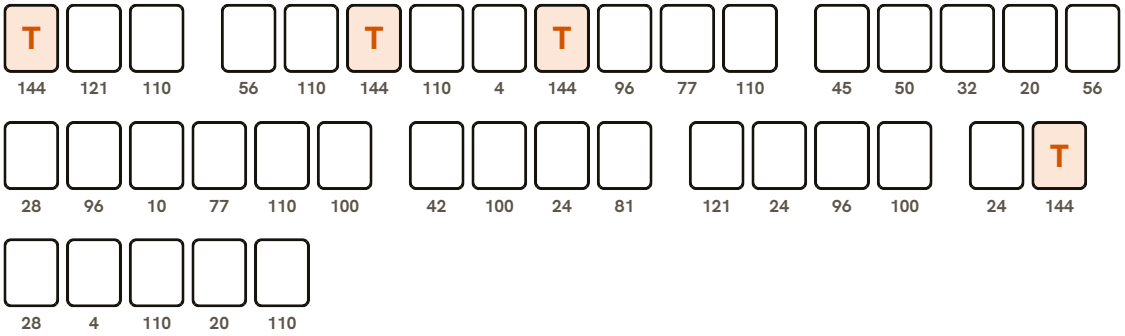
6669 - 3167 = ☐ → L

Scratch space:

CLUE 4 Multiplication facts (1-12)

> Commander Tom counts solar panels arranged in equal rows to get Clue Four.

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



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

Scratch space:

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

> Scientist Sam splits moon rocks into equal supply boxes to finish Clue Five.

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:

20 ÷ 10 = ☐	88 ÷ 11 = ☐	18 ÷ 6 = ☐	40 ÷ 8 = ☐	20 ÷ 2 = ☐
81 ÷ 9 = ☐	121 ÷ 11 = ☐	4 ÷ 4 = ☐	56 ÷ 8 = ☐	28 ÷ 7 = ☐
42 ÷ 7 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain flew with a jet pack, then swung a meteor scoop.
2. The villain turned on a shield belt, then swung a meteor scoop.
3. The villain used gravity boots to jump, then swung a meteor scoop.
4. The villain turned on a shield belt, then charged a ray blaster.
5. The villain fired a laser ring, then checked a star map.
6. The villain turned on a shield belt, then chatted on a comm radio.
7. The villain flew with a jet pack, then checked a star map.
8. The villain flew with a jet pack, then charged a ray blaster.
9. The villain flew with a jet pack, then set a moon compass.
10. The villain turned on a shield belt, then set a moon compass.
11. The villain fired a laser ring, then set a moon compass.
12. The villain flew with a jet pack, then chatted on a comm radio.

TEACHER / PARENT

Answer Key

The Case of the Missing Moon Trophy

Culprit: Jessica Meir

JET PACK · COMM RADIO · LEFT HANDED · SILVER GRAY HAIR · MAGNET TRAP

Trail: Start 21 → Clue 1 16 → Clue 2 9 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT HAVE A MOON COMPASS"

What is the value of the 8 in 2,863? = 800 (T) · What is the value of the 1 in 51,484? = 1000 (S) · What is the value of the 9 in 952? = 900 (V) · What is the value of the 3 in 430? = 30 (E) · What is the value of the 2 in 92,350? = 2000 (L) · What is the value of the 6 in 602? = 600 (N) · What is the value of the 8 in 8,025? = 8000 (H) · What is the value of the 7 in 17,152? = 7000 (O) · What is the value of the 5 in 4,259? = 50 (I) · What is the value of the 4 in 1,487? = 400 (P) · What is the value of the 5 in 15,096? = 5000 (C) · What is the value of the 4 in 64,919? = 4000 (M) · What is the value of the 8 in 485? = 80 (D) · What is the value of the 6 in 4,064? = 60 (A)

Clue 2 (Addition): "THE SNEAKY SUSPECT USED THEIR LEFT HAND"

1129 + 1450 = 2579 (T) · 3940 + 4236 = 8176 (U) · 2602 + 6063 = 8665 (K) · 1735 + 2187 = 3922 (D) · 4219 + 2686 = 6905 (Y) · 1262 + 1734 = 2996 (A) · 3853 + 3293 = 7146 (E) · 3844 + 5303 = 9147 (N) · 2030 + 894 = 2924 (R) · 3748 + 4547 = 8295 (F) · 3529 + 5817 = 9346 (C) · 2206 + 4081 = 6287 (L) · 959 + 1410 = 2369 (I) · 5291 + 2631 = 7922 (H) · 2240 + 1992 = 4232 (P) · 1604 + 2549 = 4153 (S)

Clue 3 (Subtraction): "A MAGNET TRAP STOPPED THE SNEAKY VILLAIN"

8880 - 2828 = 6052 (A) · 5935 - 2291 = 3644 (R) · 9520 - 3185 = 6335 (H) · 7160 - 2906 = 4254 (T) · 12226 - 3329 = 8897 (K) · 5094 - 3681 = 1413 (E) · 5971 - 1788 = 4183 (I) · 4813 - 2413 = 2400 (N) · 6519 - 4672 = 1847 (P) · 5005 - 2620 = 2385 (M) · 11006 - 3075 = 7931 (S) · 5678 - 4064 = 1614 (Y) · 3562 - 1648 = 1914 (V) · 7049 - 2013 = 5036 (G) · 8623 - 1764 = 6859 (D) · 11643 - 2961 = 8682 (O) · 6669 - 3167 = 3502 (L)

Clue 4 (Multiplication facts (1-12)): "THE DETECTIVE FOUND SILVER GRAY HAIR AT SCENE"

12 × 12 = 144 (T) · 9 × 5 = 45 (F) · 4 × 8 = 32 (U) · 8 × 12 = 96 (I) · 4 × 5 = 20 (N) · 7 × 11 = 77 (V) · 2 × 5 = 10 (L) · 6 × 7 = 42 (G) · 2 × 2 = 4 (C) · 11 × 11 = 121 (H) · 9 × 9 = 81 (Y) · 3 × 8 = 24 (A) · 11 × 10 = 110 (E) · 4 × 7 = 28 (S) · 8 × 7 = 56 (D) · 5 × 10 = 50 (O) · 10 × 10 = 100 (R)

Clue 5 (Division facts (1-12)): surviving statement is box 12 → Jessica Meir

20 ÷ 10 = 2 · 88 ÷ 11 = 8 · 18 ÷ 6 = 3 · 40 ÷ 8 = 5 · 20 ÷ 2 = 10 · 81 ÷ 9 = 9 · 121 ÷ 11 = 11 · 4 ÷ 4 = 1 · 56 ÷ 8 = 7 · 28 ÷ 7 = 4 · 42 ÷ 7 = 6