



The Case of the Starlight Sabotage

Grade 3 math · Place value, Addition, Multiplication, Skip counting, Division · Reading level grades 3-4

Detective: _____ Date: _____

Oh no! A mysterious rogue has messed up the star flight paths at Starlight Station. The Station Captain needs your help to crack the codes and catch the Cosmic Crasher before the rockets launch!

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 Cosmic Crasher is _____

Possible suspects

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

NAME	GEAR ITEM	SPACE TOOL	WRITING HAND	HELMET VISOR	CAPTURE TOOL
Neil Armstrong	Plasma-Shield	Star-Map	Right-handed	Silver visor	Magnetic net
Guy Bluford	Nebula-Cloak	Solar-Scoop	Left-handed	Silver visor	Gravity beam
Fred Haise	Rocket-Pack	Star-Map	Left-handed	Silver visor	Gravity beam
Gene Cernan	Laser-Cutter	Star-Map	Right-handed	Silver visor	Gravity beam
Scott Kelly	Nebula-Cloak	Comet-Dust	Right-handed	Blue visor	Gravity beam
Valentina Tereshkova	Grav-Boots	Lunar-Drill	Right-handed	Silver visor	Ice laser
Tim Peake	Laser-Cutter	Space-Wrench	Left-handed	Gold visor	Gravity beam
Alan Shepard	Rocket-Pack	Space-Wrench	Left-handed	Gold visor	Gravity beam
John Glenn	Plasma-Shield	Space-Wrench	Left-handed	Silver visor	Gravity beam
Mae Jemison	Plasma-Shield	Lunar-Drill	Left-handed	Gold visor	Gravity beam
Guion Bluford	Grav-Boots	Solar-Scoop	Left-handed	Blue visor	Ice laser
Buzz Aldrin	Nebula-Cloak	Lunar-Drill	Left-handed	Silver visor	Magnetic net
Sunita Williams	Grav-Boots	Space-Wrench	Left-handed	Silver visor	Gravity beam
Chris Hadfield	Nebula-Cloak	Space-Wrench	Left-handed	Silver visor	Gravity beam
Sally Ride	Rocket-Pack	Star-Map	Left-handed	Gold visor	Magnetic net
Mark Kelly	Rocket-Pack	Lunar-Drill	Right-handed	Blue visor	Ice laser
Ed White	Rocket-Pack	Space-Wrench	Right-handed	Silver visor	Ice laser
Ellen Ochoa	Grav-Boots	Star-Map	Left-handed	Gold visor	Ice laser
Peggy Whitson	Laser-Cutter	Solar-Scoop	Left-handed	Silver visor	Gravity beam
Pete Conrad	Rocket-Pack	Solar-Scoop	Left-handed	Blue visor	Ice laser
Yuri Gagarin	Rocket-Pack	Space-Wrench	Right-handed	Silver visor	Gravity beam

CLUE 1 Place value

The station radar flashed a weird number. To find the first clue, look at the digit in the tens place of our coordinate scan!

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

T																	T
1000	60	30	20	500	6000	6000	800	500	4000	900	9000	30	200	4000	9000	1000	

5000	200	30	800	200	9000	6000	800	600	200	400	9000	9000	40

What is the value of the 1 in 1,752? →

T

What is the value of the 4 in 8,429? →

C

What is the value of the 4 in 849? →

P

What is the value of the 9 in 948? →

D

What is the value of the 3 in 434? →

E

What is the value of the 9 in 9,532? →

O

What is the value of the 2 in 261? →

S

What is the value of the 6 in 26,415? →

L

What is the value of the 6 in 5,619? →

R

What is the value of the 4 in 4,111? →

N

What is the value of the 5 in 5,891? →

U

What is the value of the 8 in 9,859? →

A

What is the value of the 5 in 3,528? →

I

What is the value of the 2 in 4,626? →

V

What is the value of the 6 in 363? →

H

Scratch space:

CLUE 2

Space logs showed two different teams counting falling meteors. If we add their counts together, we get the code for the next locked locker!

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

Diagram illustrating the sequence of numbers and the positions of the 'T' markers:

Row	Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7	Box 8	Box 9	Box 10
Top Row	298	863	391	592	952	592	392	391	699	298
Bottom Row	588	986	298	863	298	863	391	986	624	812

The 'T' markers are located at the 4th and 8th positions in the top row, and at the 3rd and 5th positions in the bottom row.

$$127 + 171 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$342 + 619 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$339 + 249 = \boxed{} \rightarrow \boxed{\text{W}}$$

$$134 + 165 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

$$183 + 413 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$569 + 417 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$643 + 309 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$268 + 544 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$247 + 377 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$233 + 422 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$451 + 248 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$380 + 212 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$187 + 138 = \boxed{} \rightarrow \boxed{0}$$

$$270 + 593 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$228 + 163 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$131 + 261 = \boxed{} \rightarrow \boxed{\text{P}}$$

Scratch space:

CLUE 3

Multiplication facts (1-12)

The hydroponics bay had star-plants growing in perfect rows. Let us multiply the rows by the plants in each row to find the secret path.

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

T																	
35	22	40	50	32	144	49	40	2	8	10	35	50	8	96	96	40	15
80	24	8	144	50	8	11	6	35	24	80	40	8	54				

$5 \times 7 = \square \rightarrow \boxed{\text{T}}$

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

$12 \times 8 = \square \rightarrow \boxed{\text{P}}$

$6 \times 4 = \square \rightarrow \boxed{\text{Y}}$

$5 \times 8 = \square \rightarrow \boxed{\text{E}}$

$1 \times 2 = \square \rightarrow \boxed{\text{W}}$

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

$1 \times 10 = \square \rightarrow \boxed{\text{S}}$

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

$1 \times 6 = \square \rightarrow \boxed{\text{I}}$

$10 \times 5 = \square \rightarrow \boxed{\text{R}}$

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

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

$8 \times 4 = \square \rightarrow \boxed{\text{O}}$

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

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

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

Scratch space:

CLUE 4 Skip counting

The landing pad lights flashed in a steady pattern. Look, they are skip-counting by fives to guide our ship safely to the next clue!

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

A															
65	39	9	35	130	60	55	130	9	39	40	55	26	65	39	
39	21	40	80	80	60	28	40	10	80	25	60	28	60	110	36

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

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, __, 120, 130 → **C**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, __, 60, 65 → **R**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 → **W**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, __, 40, 45 → **L**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, __, 140, 150 → **V**

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

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, __, 24, 27 → **P**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, __, 90, 100 → **T**

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

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, __, 12, 14 → **N**

Skip-count by 3s. Fill the blank: 3, 6, __, 12, 15 → **I**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, __, 45, 50 → **O**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, __, 42, 45 → **S**

Scratch space:

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

We found a bag of space crystals to share among the crew. If we divide them equally among our three teams, the leftover number gives us the final secret!

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:

$6 \div 2 = \boxed{}$

$15 \div 3 = \boxed{}$

$9 \div 1 = \boxed{}$

$22 \div 11 = \boxed{}$

$36 \div 6 = \boxed{}$

$100 \div 10 = \boxed{}$

$36 \div 3 = \boxed{}$

$49 \div 7 = \boxed{}$

$72 \div 9 = \boxed{}$

$1 \div 1 = \boxed{}$

$8 \div 2 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain floated through the airlock, then zipped toward the asteroid belt.
2. The villain sneaked into the cargo bay, then hid behind the giant solar panel.
3. The villain floated through the airlock, then tangled up the antenna wires.
4. The villain zapped the main power box, then zipped toward the asteroid belt.
5. The villain sneaked into the cargo bay, then stole the crystal fuel cell.
6. The villain scrambled the rocket controls, then fled down the escape hatch.
7. The villain zapped the main power box, then hid behind the giant solar panel.
8. The villain scrambled the rocket controls, then zipped toward the asteroid belt.
9. The villain unlocked the gravity generator, then tangled up the antenna wires.
10. The villain sneaked into the cargo bay, then zipped toward the asteroid belt.
11. The villain scrambled the rocket controls, then tangled up the antenna wires.
12. The villain unlocked the gravity generator, then zipped toward the asteroid belt.

Answer Key

The Case of the Starlight Sabotage

Culprit: John Glenn

Plasma-Shield · Space-Wrench · Left-handed · Silver visor · Gravity beam

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT USE A SOLAR SCOOP"

What is the value of the 1 in 1,752? = 1000 (T) · What is the value of the 4 in 8,429? = 400 (C) · What is the value of the 4 in 849? = 40 (P) · What is the value of the 9 in 948? = 900 (D) · What is the value of the 3 in 434? = 30 (E) · What is the value of the 9 in 9,532? = 9000 (O) · What is the value of the 2 in 261? = 200 (S) · What is the value of the 6 in 26,415? = 6000 (L) · What is the value of the 6 in 5,619? = 600 (R) · What is the value of the 4 in 4,111? = 4000 (N) · What is the value of the 5 in 5,891? = 5000 (U) · What is the value of the 8 in 9,859? = 800 (A) · What is the value of the 5 in 3,528? = 500 (I) · What is the value of the 2 in 4,626? = 20 (V) · What is the value of the 6 in 363? = 60 (H)

Clue 2 (Addition): "THE SUSPECT WROTE NOTES WITH THEIR LEFT HAND"

$127 + 171 = 298$ (T) · $342 + 619 = 961$ (N) · $339 + 249 = 588$ (W) · $134 + 165 = 299$ (A) · $183 + 413 = 596$ (F) · $569 + 417 = 986$ (I) · $643 + 309 = 952$ (U) · $268 + 544 = 812$ (L) · $247 + 377 = 624$ (R) · $233 + 422 = 655$ (D) · $451 + 248 = 699$ (C) · $380 + 212 = 592$ (S) · $187 + 138 = 325$ (O) · $270 + 593 = 863$ (H) · $228 + 163 = 391$ (E) · $131 + 261 = 392$ (P)

Clue 3 (Multiplication facts (1-12)): "THE ROGUE WAS TRAPPED BY A GRAVITY BEAM"

$5 \times 7 = 35$ (T) · $9 \times 6 = 54$ (M) · $12 \times 8 = 96$ (P) · $6 \times 4 = 24$ (Y) · $5 \times 8 = 40$ (E) · $1 \times 2 = 2$ (W) · $4 \times 2 = 8$ (A) · $1 \times 10 = 10$ (S) · $11 \times 2 = 22$ (H) · $1 \times 6 = 6$ (I) · $10 \times 5 = 50$ (R) · $1 \times 11 = 11$ (V) · $12 \times 12 = 144$ (G) · $8 \times 4 = 32$ (O) · $7 \times 7 = 49$ (U) · $8 \times 10 = 80$ (B) · $5 \times 3 = 15$ (D)

Clue 4 (Skip counting): "A SILVER VISOR WAS SPOTTED ON THE DECK"

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 = 65 (A) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, __, 70, 80 = 60 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, __, 120, 130 = 110 (C) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, __, 60, 65 = 55 (R) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 = 26 (W) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, __, 40, 45 = 35 (L) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, __, 140, 150 = 130 (V) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 = 36 (K) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, __, 24, 27 = 21 (P) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, __, 90, 100 = 80 (T) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, __, 30, 32 = 28 (D) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, __, 30, 35 = 25 (H) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, __, 12, 14 = 10 (N) · Skip-count by 3s. Fill the blank: 3, 6, __, 12, 15 = 9 (I) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, __, 45, 50 = 40 (O) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, __, 42, 45 = 39 (S)

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

$6 \div 2 = 3$ · $15 \div 3 = 5$ · $9 \div 1 = 9$ · $22 \div 11 = 2$ · $36 \div 6 = 6$ · $100 \div 10 = 10$ · $36 \div 3 = 12$ · $49 \div 7 = 7$ · $72 \div 9 = 8$ · $1 \div 1 = 1$ · $8 \div 2 = 4$