



The Cosmic Canopy Caper

Grade 2 math · Addition, Place value, Subtraction, Skip counting, Missing addends · Reading level grades 3-4

Detective: _____ Date: _____

Someone broke into Astro-Dome Alpha and stole the golden hyper-drive engine! The Chief Rocket Engineer needs the Star Patrol to crack the clues and catch the Cosmic Bandit before they escape the 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 Cosmic Bandit is _____

Possible suspects

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

NAME	SPACE GEAR	SPECIAL TOOL	ASTRONAUT WATCH	SPACE HELMET VISOR	FOIL WEAPON
Yuri Gagarin	Laser Blasters	Cyber Wrench	Left Handed Watch	Ruby Red Visor	Bright Starlight
Michael Collins	Solar Shields	Comm Link	Left Handed Watch	Neon Green Visor	Magnet Fields
Ed White	Gravity Belts	Space Probe	Right Handed Watch	Ruby Red Visor	Cosmic Dust
John Glenn	Gravity Belts	Plasma Torch	Right Handed Watch	Neon Green Visor	Cosmic Dust
Peggy Whitson	Laser Blasters	Cyber Wrench	Left Handed Watch	Neon Green Visor	Cosmic Dust
Harrison Schmitt	Solar Shields	Plasma Torch	Left Handed Watch	Cobalt Blue Visor	Magnet Fields
Guion Bluford	Laser Blasters	Plasma Torch	Right Handed Watch	Neon Green Visor	Cosmic Dust
Gene Cernan	Solar Shields	Cyber Wrench	Right Handed Watch	Cobalt Blue Visor	Cosmic Dust
Valentina Tereshkova	Solar Shields	Comm Link	Left Handed Watch	Ruby Red Visor	Cosmic Dust
Buzz Aldrin	Jetpack Boosters	Plasma Torch	Right Handed Watch	Neon Green Visor	Cosmic Dust
Alan Shepard	Laser Blasters	Cyber Wrench	Right Handed Watch	Neon Green Visor	Cosmic Dust
Fred Haise	Solar Shields	Comm Link	Right Handed Watch	Neon Green Visor	Cosmic Dust
Kalpana Chawla	Jetpack Boosters	Star Map	Right Handed Watch	Ruby Red Visor	Cosmic Dust
Alexey Leonov	Solar Shields	Cyber Wrench	Right Handed Watch	Neon Green Visor	Bright Starlight
Jack Swigert	Magnetic Boots	Plasma Torch	Left Handed Watch	Cobalt Blue Visor	Bright Starlight
Mae Jemison	Jetpack Boosters	Plasma Torch	Left Handed Watch	Cobalt Blue Visor	Cosmic Dust
Jim Lovell	Laser Blasters	Star Map	Right Handed Watch	Neon Green Visor	Bright Starlight
Judy Resnik	Magnetic Boots	Plasma Torch	Left Handed Watch	Ruby Red Visor	Magnet Fields
Sally Ride	Magnetic Boots	Comm Link	Right Handed Watch	Neon Green Visor	Cosmic Dust
Ellison Onizuka	Laser Blasters	Cyber Wrench	Right Handed Watch	Ruby Red Visor	Bright Starlight
Chris Hadfield	Gravity Belts	Space Probe	Right Handed Watch	Cobalt Blue Visor	Bright Starlight

CLUE 1 Addition

Cadet Leo tallies up the dropped cargo items near the launch pad. Adding the moon rocks together reveals the first clue!

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

T									T									T
80	21	23	75	96	93	87	65	80	87	79	23	98	93	79	80			
50	96	42	42	88	96	50	79	29	29	74	65	93	57					

$45 + 35 = \square \rightarrow \text{T}$	$30 + 57 = \square \rightarrow \text{D}$	$44 + 52 = \square \rightarrow \text{A}$
$31 + 26 = \square \rightarrow \text{K}$	$45 + 43 = \square \rightarrow \text{Y}$	$52 + 41 = \square \rightarrow \text{N}$
$10 + 19 = \square \rightarrow \text{M}$	$16 + 26 = \square \rightarrow \text{R}$	$42 + 23 = \square \rightarrow \text{I}$
$15 + 8 = \square \rightarrow \text{E}$	$51 + 47 = \square \rightarrow \text{S}$	$49 + 25 = \square \rightarrow \text{L}$
$15 + 6 = \square \rightarrow \text{H}$	$35 + 15 = \square \rightarrow \text{C}$	$37 + 42 = \square \rightarrow \text{O}$
$49 + 26 = \square \rightarrow \text{B}$		

Scratch space:

CLUE 2

The radar screen flashes a code with tens and ones. Breaking down the digits reveals a secret transmission.

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

80 97 45 61 75 45 72 23 53 62 72 75 84 47 80 51 45 72 94 61

72 94 47 76 97 80 97 72 75 84 45 84 51 72 80 31 97

What number has 8 tens and 0 ones?

What number has 7 tens and 5 ones?

A diagram showing a box with an arrow pointing to a box labeled 'N'.

What number has 4 tens and 5 ones?

A diagram showing a box with an arrow pointing to a box labeled 'E'.

What number has 7 tens and 2 ones?

A diagram showing a transition. On the left is a simple rectangular box. An arrow points from this box to a second box on the right. The second box is a rounded square and contains the letter 'A' in a bold, sans-serif font.

What number has 5 tens and 3 ones?

What number has 6 tens and 1 one?



What number has 5 tens and 1 one?

What number has 4 tens and 7 ones?

What number has 9 tens and 7 ones?

A diagram showing a transformation. On the left is a simple rectangular box. An arrow points from this box to another rectangular box on the right. This second box contains the letter 'H' in a bold, sans-serif font.

What number has 9 tens and 4 ones?



What number has 6 tens and 2 ones?

What number has 3 tens and 1 one?

What number has 7 tens and 6 ones?

A diagram showing a transformation. On the left is a rounded rectangle containing a question mark. An arrow points to the right, where there is a rounded rectangle containing the letter 'G'.

What number has 2 tens and 3 ones?

A diagram showing a transition from an empty box to a box containing the letter K. The first box is empty, followed by a right-pointing arrow, and then a second box containing the letter 'K'.

What number has 8 tens and 4 ones?

Scratch space:

CLUE 3 Subtraction

We check the oxygen tanks to see how much air the thief used. Subtracting the left-over air uncovers a clue.

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

T																		
66	68	78	31	23	60	63	87	39	19	23	55	55	66	81	27	27	78	60

31	39	54	81	55	52	47	54	60	87	55	66							

$67 - 1 = \square \rightarrow$ T	$30 - 11 = \square \rightarrow$ W	$27 - 4 = \square \rightarrow$ A
$79 - 19 = \square \rightarrow$ D	$75 - 21 = \square \rightarrow$ C	$46 - 19 = \square \rightarrow$ P
$53 - 6 = \square \rightarrow$ I	$72 - 20 = \square \rightarrow$ M	$44 - 13 = \square \rightarrow$ B
$85 - 30 = \square \rightarrow$ S	$70 - 7 = \square \rightarrow$ G	$107 - 26 = \square \rightarrow$ O
$60 - 21 = \square \rightarrow$ Y	$69 - 1 = \square \rightarrow$ H	$92 - 14 = \square \rightarrow$ E
$111 - 24 = \square \rightarrow$ U		

Scratch space:

CLUE 4 Skip counting

The beacon light blinks in a pattern of repeating numbers. Skip counting the flashes points us to new evidence.

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

A														
39	8	28	40	8	12	20	28	28	8	60	6	16	40	20
						A								
12	14	40	25	28	65	39	10	10	33	28	16	36	28	8

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

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

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

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

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

Skip-count by 10s. Fill the blank: 10, 20, 30, __, 50, 60 → **O**

Skip-count by 2s. Fill the blank: 2, 4, __, 8, 10 → **I**

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, __, 14, 16 → **G**

Skip-count by 5s. Fill the blank: 5, 10, 15, __, 25, 30 → **R**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 → **L**

Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 → **N**

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

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, __, 36, 39

→

H

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, __, 18, 20

→

S

Scratch space:

CLUE 5**Missing addends - the last clue**

The fuel scale must balance to exactly one hundred units. Solving for the missing amount unlocks the final data.

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:

$2 + \underline{\quad} = 6$

$6 + \underline{\quad} = 11$

$7 + \underline{\quad} = 9$

$9 + \underline{\quad} = 10$

$6 + \underline{\quad} = 9$

$1 + \underline{\quad} = 13$

$7 + \underline{\quad} = 18$

$9 + \underline{\quad} = 15$

$4 + \underline{\quad} = 14$

$4 + \underline{\quad} = 12$

$4 + \underline{\quad} = 11$

Step 2 - cross out the sentence with each answer:

1. The villain unlocked the cargo bay, then pocketed the glowing fuel core.
2. The villain sneaked through the airlock, then swiped the golden hyperdrive.
3. The villain hacked the mainframe computer, then grabbed the secret plans.
4. The villain sneaked through the airlock, then grabbed the secret plans.
5. The villain zoomed past the satellite, then swiped the golden hyperdrive.
6. The villain bypassed the laser grid, then snatched the flight codes.
7. The villain hacked the mainframe computer, then snatched the flight codes.
8. The villain unlocked the cargo bay, then snatched the flight codes.
9. The villain bypassed the laser grid, then swiped the golden hyperdrive.
10. The villain bypassed the laser grid, then grabbed the secret plans.
11. The villain sneaked through the airlock, then snatched the flight codes.
12. The villain sneaked through the airlock, then pocketed the glowing fuel core.

Answer Key

The Cosmic Canopy Caper

Culprit: John Glenn

Gravity Belts · Plasma Torch · Right Handed Watch · Neon Green Visor · Cosmic Dust

Trail: Start 21 → Clue 1 17 → Clue 2 11 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE BANDIT DOES NOT CARRY A COMM LINK"

$45 + 35 = 80$ (T) · $30 + 57 = 87$ (D) · $44 + 52 = 96$ (A) · $31 + 26 = 57$ (K) · $45 + 43 = 88$ (Y) · $52 + 41 = 93$ (N) · $10 + 19 = 29$ (M) · $16 + 26 = 42$ (R) · $42 + 23 = 65$ (I) · $15 + 8 = 23$ (E) · $51 + 47 = 98$ (S) · $49 + 25 = 74$ (L) · $15 + 6 = 21$ (H) · $35 + 15 = 50$ (C) · $37 + 42 = 79$ (O) · $49 + 26 = 75$ (B)

Clue 2 (Place value): "THE SNEAKY BANDIT WEARS A RIGHT HANDED WATCH"

What number has 8 tens and 0 ones? = 80 (T) · What number has 7 tens and 5 ones? = 75 (N) · What number has 4 tens and 5 ones? = 45 (E) · What number has 7 tens and 2 ones? = 72 (A) · What number has 5 tens and 3 ones? = 53 (Y) · What number has 6 tens and 1 one? = 61 (S) · What number has 5 tens and 1 one? = 51 (W) · What number has 4 tens and 7 ones? = 47 (I) · What number has 9 tens and 7 ones? = 97 (H) · What number has 9 tens and 4 ones? = 94 (R) · What number has 6 tens and 2 ones? = 62 (B) · What number has 3 tens and 1 one? = 31 (C) · What number has 7 tens and 6 ones? = 76 (G) · What number has 2 tens and 3 ones? = 23 (K) · What number has 8 tens and 4 ones? = 84 (D)

Clue 3 (Subtraction): "THE BAD GUY WAS STOPPED BY COSMIC DUST"

$67 - 1 = 66$ (T) · $30 - 11 = 19$ (W) · $27 - 4 = 23$ (A) · $79 - 19 = 60$ (D) · $75 - 21 = 54$ (C) · $46 - 19 = 27$ (P) · $53 - 6 = 47$ (I) · $72 - 20 = 52$ (M) · $44 - 13 = 31$ (B) · $85 - 30 = 55$ (S) · $70 - 7 = 63$ (G) · $107 - 26 = 81$ (O) · $60 - 21 = 39$ (Y) · $69 - 1 = 68$ (H) · $92 - 14 = 78$ (E) · $111 - 24 = 87$ (U)

Clue 4 (Skip counting): "A NEON GREEN VISOR GLOWED AT THE SCENE"

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

Clue 5 (Missing addends): surviving statement is box 9 → John Glenn

$2 + \underline{\quad} = 6 = 4$ · $6 + \underline{\quad} = 11 = 5$ · $7 + \underline{\quad} = 9 = 2$ · $9 + \underline{\quad} = 10 = 1$ · $6 + \underline{\quad} = 9 = 3$ · $1 + \underline{\quad} = 13 = 12$ · $7 + \underline{\quad} = 18 = 11$ · $9 + \underline{\quad} = 15 = 6$ · $4 + \underline{\quad} = 14 = 10$ · $4 + \underline{\quad} = 12 = 8$ · $4 + \underline{\quad} = 11 = 7$