



The Astro-Station Crystal Caper

Grade 1 math · Addition, Subtraction, Skip counting, Place value, Missing addends · Reading level grades 3-4

Detective: _____ **Date:** _____

Red alert! Someone has sneaked into the reactor room of Astro-Station Nebula and stolen the rare Hyper-Drive Crystal! Without it, our starship is stranded in deep space. The Station Commander needs your help to scan the clues, solve the math puzzles, and catch the sneaky Cosmic Bandit before they escape to another galaxy!

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	INFILTRATION METHOD	LASER GRIP	HELMET COLOR	BANDIT WEAKNESS
Chris Hadfield	Plasma-shield	Disables robot guards	Right-handed grip	Bronze space-helmet	Stunned by bright flares
Kalpana Chawla	Tractor-beam	Decodes computer codes	Left-handed grip	Bronze space-helmet	Trapped by space-nets
Valentina Tereshkova	Tractor-beam	Disables robot guards	Left-handed grip	Bronze space-helmet	Trapped by space-nets
Scott Kelly	Tractor-beam	Bypasses airlocks	Left-handed grip	Bronze space-helmet	Trapped by space-nets
Alan Shepard	Laser-blaster	Disables robot guards	Left-handed grip	Bronze space-helmet	Trapped by space-nets
Sally Ride	Tractor-beam	Bypasses airlocks	Left-handed grip	Silver space-helmet	Trapped by space-nets
Gene Cernan	Rocket-pack	Sneaks in shadows	Left-handed grip	Silver space-helmet	Trapped by space-nets
Guion Bluford	Gravity-boots	Disables robot guards	Left-handed grip	Gold space-helmet	Stunned by bright flares
Buzz Aldrin	Laser-blaster	Disables robot guards	Right-handed grip	Silver space-helmet	Trapped by space-nets
John Glenn	Plasma-shield	Sneaks in shadows	Left-handed grip	Silver space-helmet	Trapped by space-nets
Peggy Whitson	Rocket-pack	Hacks security cameras	Left-handed grip	Silver space-helmet	Trapped by space-nets
Al Worden	Rocket-pack	Decodes computer codes	Right-handed grip	Silver space-helmet	Stopped by magnetic fields
Ed White	Tractor-beam	Decodes computer codes	Left-handed grip	Silver space-helmet	Trapped by space-nets
Gus Grissom	Tractor-beam	Decodes computer codes	Left-handed grip	Bronze space-helmet	Stopped by magnetic fields
Yuri Gagarin	Rocket-pack	Bypasses airlocks	Right-handed grip	Gold space-helmet	Stopped by magnetic fields
Fred Haise	Laser-blaster	Decodes computer codes	Right-handed grip	Silver space-helmet	Stunned by bright flares
Mae Jemison	Tractor-beam	Bypasses airlocks	Left-handed grip	Gold space-helmet	Stunned by bright flares
Neil Armstrong	Laser-blaster	Hacks security cameras	Left-handed grip	Bronze space-helmet	Stopped by magnetic fields
Roger Chaffee	Tractor-beam	Sneaks in shadows	Left-handed grip	Gold space-helmet	Trapped by space-nets
Jack Swigert	Laser-blaster	Decodes computer codes	Right-handed grip	Bronze space-helmet	Trapped by space-nets
Jim Lovell	Tractor-beam	Hacks security cameras	Left-handed grip	Silver space-helmet	Stunned by bright flares

CLUE 1

The Cosmic Bandit left a trail of broken battery cells. We found one pile near the engine room and another pile by the main hatch. Add them up to find where the Bandit went next!

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

Diagram illustrating a sequence of numbers arranged in two rows of boxes. The top row contains 15 boxes, with the 1st, 8th, and 15th boxes highlighted in orange and labeled 'T'. The bottom row contains 14 boxes.

Top Row (15 boxes):

- Box 1 (Orange, T): 16
- Box 2: 18
- Box 3: 15
- Box 4: 2
- Box 5: 3
- Box 6: 6
- Box 7: 5
- Box 8 (Orange, T): 17
- Box 9: 16
- Box 10: 5
- Box 11: 19
- Box 12: 15
- Box 13: 4
- Box 14: 6
- Box 15 (Orange, T): 19
- Box 16: 16

Bottom Row (14 boxes):

- Box 1: 2
- Box 2: 14
- Box 3: 9
- Box 4: 3
- Box 5: 4
- Box 6: 4
- Box 7: 3
- Box 8: 17
- Box 9: 13
- Box 10: 8
- Box 11: 19
- Box 12: 11
- Box 13: 12
- Box 14: 4

$10 + 6 = \square \rightarrow \boxed{\text{T}}$

$5 + 4 = \boxed{} \rightarrow \boxed{\text{P}}$

$6 + 5 = \boxed{} \rightarrow \boxed{\text{C}}$

$5 + 7 = \square \rightarrow \boxed{\text{K}}$

$5 + 9 = \boxed{} \rightarrow \boxed{\text{Y}}$

$1 + 2 = \square \rightarrow \boxed{\mathbf{A}}$

10 + 9 = →

3 + 5 = → **L**

$4 + 2 = \square \rightarrow \boxed{\mathbf{N}}$

$1 + 3 = \square \rightarrow \boxed{\mathbf{S}}$

$1 + 1 = \square \rightarrow \boxed{\mathbf{B}}$

$12 + 6 = \square \rightarrow \boxed{\text{H}}$

$5 + 10 = \boxed{} \rightarrow \boxed{\text{E}}$

$$5 + 8 = \boxed{} \rightarrow \boxed{\text{R}}$$

$2 + 3 = \boxed{} \rightarrow \boxed{\text{D}}$

$6 + 11 = \boxed{} \rightarrow \boxed{1}$

Scratch space:

CLUE 2
Subtraction

A pack of space probes was damaged during the escape. We had a full crate of spare parts, but the Bandit took some. Subtract the parts we have left from the total to see what is missing!

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

W																
4	9	12	5	6	8	2	7	9	12	16	10	11	8	2	9	2
17	7	5	13	9	15	3	19	8	16	1						

$8 - 4 = \square \rightarrow \boxed{\text{W}}$

$18 - 3 = \square \rightarrow \boxed{\text{P}}$

$19 - 8 = \square \rightarrow \boxed{\text{A}}$

$19 - 3 = \square \rightarrow \boxed{\text{T}}$

$7 - 4 = \square \rightarrow \boxed{\text{R}}$

$20 - 1 = \square \rightarrow \boxed{\text{I}}$

$16 - 8 = \square \rightarrow \boxed{\text{N}}$

$15 - 9 = \square \rightarrow \boxed{\text{U}}$

$19 - 9 = \square \rightarrow \boxed{\text{H}}$

$19 - 7 = \square \rightarrow \boxed{\text{F}}$

$18 - 5 = \square \rightarrow \boxed{\text{V}}$

$11 - 9 = \square \rightarrow \boxed{\text{D}}$

$10 - 5 = \square \rightarrow \boxed{\text{O}}$

$11 - 4 = \square \rightarrow \boxed{\text{L}}$

$18 - 9 = \square \rightarrow \boxed{\text{E}}$

$10 - 9 = \square \rightarrow \boxed{\text{S}}$

$19 - 2 = \square \rightarrow \boxed{\text{G}}$

Scratch space:

CLUE 3 Skip counting

The emergency lights on the control panel are blinking in a steady pattern. Skip count the flashes to decode the lock code and open the safe!

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

U																	
40	14	27	14	26	36	24	27	16	27	15	14	15	65	15	25	36	26
15	140	27	12	36	16	120	90	15									

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

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

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 → **D**

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

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

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

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

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, __, 150, 160 → **H**

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

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, __, 26, 28 → **C**

Skip-count by 5s. Fill the blank: 5, 10, __, 20, 25 → **T**

Scratch space:

CLUE 4 Place value

Our space-radar screen is flickering with green dots from the engine trail. Count the groups of ten dots and the extra single dots to read the sector coordinates!

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

W																		
53	98	99	20	33	72	66	62	42	69	26	98	88	76	98	69	80	98	30
62	78	88	92	30	78	76	98	62										

What number has 5 tens and 3 ones? → **W**

What number has 6 tens and 2 ones? → **S**

What number has 7 tens and 2 ones? → **N**

What number has 6 tens and 9 ones? → **L**

What number has 8 tens and 0 ones? → **M**

What number has 3 tens and 3 ones? → **U**

What number has 7 tens and 8 ones? → **C**

What number has 3 tens and 0 ones? → **T**

What number has 8 tens and 8 ones? → **R**

What number has 9 tens and 9 ones? → **F**

What number has 4 tens and 2 ones? → **I**

What number has 2 tens and 6 ones? → **V**

What number has 9 tens and 8 ones? → **E**

What number has 9 tens and 2 ones? → **A**

What number has 6 tens and 6 ones? → **D**

What number has 2 tens and 0 ones? → **O**

What number has 7 tens and 6 ones? → **H**

Scratch space:

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

The backup life-support tank needs a full charge to run. We only have some power left in the cells. Find how much more power we need to reach the full charge!

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:

$2 + \underline{\quad} = 10$

$2 + \underline{\quad} = 14$

$1 + \underline{\quad} = 5$

$4 + \underline{\quad} = 6$

$8 + \underline{\quad} = 19$

$2 + \underline{\quad} = 11$

$3 + \underline{\quad} = 10$

$2 + \underline{\quad} = 8$

$4 + \underline{\quad} = 9$

$5 + \underline{\quad} = 8$

$8 + \underline{\quad} = 9$

Step 2 - cross out the sentence with each answer:

1. The villain blasts through the blast doors with a laser, then loops the security video to hide their face.
2. The villain stomps over the security sensors using heavy gravity boots, then locks the airlock so nobody can chase them.
3. The villain blasts through the blast doors with a laser, then turns off the robot guards on the way out.
4. The villain flies over the defense turrets with a rocket pack, then slips away through the dark shadows.
5. The villain stomps over the security sensors using heavy gravity boots, then turns off the robot guards on the way out.
6. The villain stomps over the security sensors using heavy gravity boots, then slips away through the dark shadows.
7. The villain stomps over the security sensors using heavy gravity boots, then loops the security video to hide their face.
8. The villain deflects the laser traps with a bright plasma shield, then slips away through the dark shadows.
9. The villain blasts through the blast doors with a laser, then slips away through the dark shadows.
10. The villain flies over the defense turrets with a rocket pack, then loops the security video to hide their face.
11. The villain deflects the laser traps with a bright plasma shield, then turns off the robot guards on the way out.
12. The villain grabs the star crystal from afar with a tractor beam, then types a secret override to unlock the vault.

Answer Key

The Astro-Station Crystal Caper

Culprit: Peggy Whitson

Rocket-pack · Hacks security cameras · Left-handed grip · Silver space-helmet · Trapped by space-nets

Trail: Start 21 → Clue 1 17 → Clue 2 12 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE BANDIT DOES NOT BYPASS AIRLOCKS"

$10 + 6 = 16$ (T) · $5 + 4 = 9$ (P) · $6 + 5 = 11$ (C) · $5 + 7 = 12$ (K) · $5 + 9 = 14$ (Y) · $1 + 2 = 3$ (A) · $10 + 9 = 19$ (O) · $3 + 5 = 8$ (L) · $4 + 2 = 6$ (N) · $1 + 3 = 4$ (S) · $1 + 1 = 2$ (B) · $12 + 6 = 18$ (H) · $5 + 10 = 15$ (E) · $5 + 8 = 13$ (R) · $2 + 3 = 5$ (D) · $6 + 11 = 17$ (I)

Clue 2 (Subtraction): "WE FOUND LEFT HANDED GLOVE PRINTS"

$8 - 4 = 4$ (W) · $18 - 3 = 15$ (P) · $19 - 8 = 11$ (A) · $19 - 3 = 16$ (T) · $7 - 4 = 3$ (R) · $20 - 1 = 19$ (I) · $16 - 8 = 8$ (N) · $15 - 9 = 6$ (U) · $19 - 9 = 10$ (H) · $19 - 7 = 12$ (F) · $18 - 5 = 13$ (V) · $11 - 9 = 2$ (D) · $10 - 5 = 5$ (O) · $11 - 4 = 7$ (L) · $18 - 9 = 9$ (E) · $10 - 9 = 1$ (S) · $19 - 2 = 17$ (G)

Clue 3 (Skip counting): "USE SPACE NETS TO TRAP THE BANDIT"

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, __, 45, 50 = 40 (U) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, __, 30, 33 = 27 (E) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 = 26 (P) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 = 120 (D) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 = 36 (A) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 = 14 (S) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, __, 100, 110 = 90 (I) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, __, 18, 20 = 16 (N) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 = 65 (O) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, __, 150, 160 = 140 (H) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, __, 30, 35 = 25 (R) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, __, 14, 16 = 12 (B) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, __, 26, 28 = 24 (C) · Skip-count by 5s. Fill the blank: 5, 10, __, 20, 25 = 15 (T)

Clue 4 (Place value): "WE FOUND SILVER HELMET SCRATCHES"

What number has 5 tens and 3 ones? = 53 (W) · What number has 6 tens and 2 ones? = 62 (S) · What number has 7 tens and 2 ones? = 72 (N) · What number has 6 tens and 9 ones? = 69 (L) · What number has 8 tens and 0 ones? = 80 (M) · What number has 3 tens and 3 ones? = 33 (U) · What number has 7 tens and 8 ones? = 78 (C) · What number has 3 tens and 0 ones? = 30 (T) · What number has 8 tens and 8 ones? = 88 (R) · What number has 9 tens and 9 ones? = 99 (F) · What number has 4 tens and 2 ones? = 42 (I) · What number has 2 tens and 6 ones? = 26 (V) · What number has 9 tens and 8 ones? = 98 (E) · What number has 9 tens and 2 ones? = 92 (A) · What number has 6 tens and 6 ones? = 66 (D) · What number has 2 tens and 0 ones? = 20 (O) · What number has 7 tens and 6 ones? = 76 (H)

Clue 5 (Missing addends): surviving statement is box 10 → Peggy Whitson

$2 + \underline{\quad} = 10 = 8$ · $2 + \underline{\quad} = 14 = 12$ · $1 + \underline{\quad} = 5 = 4$ · $4 + \underline{\quad} = 6 = 2$ · $8 + \underline{\quad} = 19 = 11$ · $2 + \underline{\quad} = 11 = 9$ · $3 + \underline{\quad} = 10 = 7$ · $2 + \underline{\quad} = 8 = 6$ · $4 + \underline{\quad} = 9 = 5$ · $5 + \underline{\quad} = 8 = 3$ · $8 + \underline{\quad} = 9 = 1$