



The Astro Base Heist

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

Detective: _____ Date: _____

An alarm blares across Astro Base Alpha! A mysterious Cosmic Phantom has snuck into the command module and stolen the legendary Golden Star Map. The Chief Astronomer needs your math skills to track down the thief before they escape the 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 Phantom is _____

Possible suspects

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

NAME	SUIT POWER	GLOVE POWER	PILOT STYLE	HAIR COLOR	SYSTEM WEAKNESS
Joan	shield defense	warp dash	right handed	orange hair	ice blast
Chris	gravity control	magnetic grip	left handed	blue hair	strong magnets
Alexey	rocket flight	mech power	left handed	blue hair	bright flash
Winston	shield defense	warp dash	left handed	orange hair	strong magnets
Kalpana	cloak stealth	sonic boom	right handed	orange hair	strong magnets
Neil	rocket flight	warp dash	left handed	blue hair	strong magnets
Mark	gravity control	mech power	left handed	green hair	bright flash
Tim	cloak stealth	freeze ray	left handed	blue hair	strong magnets
Yuri	rocket flight	warp dash	left handed	orange hair	strong magnets
Guy	gravity control	warp dash	left handed	orange hair	bright flash
Mae	cloak stealth	sonic boom	left handed	blue hair	strong magnets
Peggy	rocket flight	freeze ray	right handed	orange hair	strong magnets
Valentina	cloak stealth	freeze ray	right handed	green hair	bright flash
Eileen	laser blasting	magnetic grip	right handed	blue hair	strong magnets
Scott	rocket flight	warp dash	right handed	blue hair	strong magnets
Sunita	shield defense	mech power	left handed	blue hair	ice blast
Alan	laser blasting	warp dash	right handed	blue hair	strong magnets
Buzz	gravity control	warp dash	right handed	blue hair	bright flash
Guion	shield defense	warp dash	left handed	blue hair	strong magnets
Glenn	rocket flight	magnetic grip	right handed	orange hair	ice blast
Franklin	shield defense	magnetic grip	right handed	orange hair	bright flash

CLUE 1 Place value

We found a glowing cargo screen that locked up. To reboot it and read the first clue, we must find the value of the digit in the tens place.

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

T								T								T
77	45	39	64	15	64	82	39	42	77	87	24	39	64	36	24	77
								T								
15	64	39	11	29	51	36	39	77	79	42	51	21	79	82		

What number has 7 tens and 7 ones? → **T**

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

What number has 3 tens and 6 ones? → **N**

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

What number has 6 tens and 4 ones? → **S**

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

What number has 7 tens and 9 ones? → **I**

What number has 4 tens and 5 ones? → **H**

What number has 3 tens and 9 ones? → **E**

What number has 8 tens and 2 ones? → **P**

What number has 1 ten and 1 one? → **M**

What number has 5 tens and 1 one? → **G**

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

What number has 1 ten and 5 ones? → **U**

What number has 2 tens and 1 one? → **R**

Scratch space:

CLUE 2 Addition

The thief knocked over two crates of spare moon boots. The Star Patrol needs to add the boots from both crates together to find the secret hatch code.

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

T							T												
97	55	72	70	38	51	97	45	38	31	88	35	72	45	72	29	88	72	58	

						T	
33	50	71	31	72	56	97	50

$40 + 57 = \square \rightarrow \text{T}$	$33 + 39 = \square \rightarrow \text{E}$	$18 + 17 = \square \rightarrow \text{W}$
$48 + 22 = \square \rightarrow \text{C}$	$21 + 24 = \square \rightarrow \text{R}$	$54 + 34 = \square \rightarrow \text{S}$
$30 + 41 = \square \rightarrow \text{A}$	$22 + 11 = \square \rightarrow \text{B}$	$13 + 18 = \square \rightarrow \text{L}$
$16 + 22 = \square \rightarrow \text{O}$	$20 + 31 = \square \rightarrow \text{N}$	$16 + 34 = \square \rightarrow \text{Y}$
$34 + 24 = \square \rightarrow \text{D}$	$24 + 32 = \square \rightarrow \text{F}$	$17 + 38 = \square \rightarrow \text{H}$
$9 + 20 = \square \rightarrow \text{U}$		

Scratch space:

CLUE 3

Subtraction

The power core is draining fast! We need to subtract the lost energy units from the starting total to see how much emergency power we have left.

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

T																	
60	21	66	67	37	73	73	17	37	14	26	17	14	17	11	17	51	

											T
15	26	45	53	17	53	17	23	14	66	60	

$87 - 27 = \square \rightarrow \boxed{\text{T}}$

$105 - 38 = \square \rightarrow \boxed{\text{V}}$

$85 - 40 = \square \rightarrow \boxed{\text{O}}$

$59 - 38 = \square \rightarrow \boxed{\text{H}}$

$31 - 14 = \square \rightarrow \boxed{\text{A}}$

$82 - 29 = \square \rightarrow \boxed{\text{M}}$

$14 - 3 = \square \rightarrow \boxed{\text{W}}$

$51 - 14 = \square \rightarrow \boxed{\text{I}}$

$48 - 22 = \square \rightarrow \boxed{\text{R}}$

$63 - 40 = \square \rightarrow \boxed{\text{G}}$

$25 - 10 = \square \rightarrow \boxed{\text{F}}$

$51 - 37 = \square \rightarrow \boxed{\text{N}}$

$109 - 36 = \square \rightarrow \boxed{\text{L}}$

$103 - 37 = \square \rightarrow \boxed{\text{E}}$

$66 - 15 = \square \rightarrow \boxed{\text{Y}}$

Scratch space:

CLUE 4 Skip counting

A trail of glowing green alien footprints stretches down the hallway. We have to count them by fives to follow the path safely.

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

W															
130	55	28	12	120	65	20	42	26	50	70	42	65	20	12	28
90	27	120	55	60	42	9	70								

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, __, 65, 70 → **H**

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

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

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

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

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

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

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, __, 75, 80 → **R**

Skip-count by 3s. Fill the blank: 3, 6, 9, __, 15, 18 → **O**

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

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

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, __, 45, 48 → **A**

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

Scratch space:

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

The spaceship's oxygen tank is only partly full. We know the total we need, so we must figure out how many more liters are missing to fill it up.

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:

$6 + \underline{\quad} = 10$

$8 + \underline{\quad} = 16$

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

$3 + \underline{\quad} = 14$

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

$10 + \underline{\quad} = 15$

$8 + \underline{\quad} = 20$

$10 + \underline{\quad} = 11$

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

$3 + \underline{\quad} = 12$

$5 + \underline{\quad} = 11$

Step 2 - cross out the sentence with each answer:

1. The villain floated past the space station, then shattered the glass with a sonic boom.
2. The villain turned on a giant force field, then escaped with a quick warp dash.
3. The villain turned on a giant force field, then shattered the glass with a sonic boom.
4. The villain became invisible near the moon, then shattered the glass with a sonic boom.
5. The villain turned on a giant force field, then used magnetic grip to steal the tools.
6. The villain floated past the space station, then lifted a heavy rocket booster with pure mech power.
7. The villain zoomed around on a jetpack, then escaped with a quick warp dash.
8. The villain became invisible near the moon, then froze the control panel with an ice ray.
9. The villain shot lasers at the satellite, then shattered the glass with a sonic boom.
10. The villain shot lasers at the satellite, then lifted a heavy rocket booster with pure mech power.
11. The villain turned on a giant force field, then lifted a heavy rocket booster with pure mech power.
12. The villain zoomed around on a jetpack, then used magnetic grip to steal the tools.

Answer Key

The Astro Base Heist

Culprit: Neil

rocket flight · warp dash · left handed · blue hair · strong magnets

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE SUSPECT DOES NOT USE MAGNETIC GRIP"

What number has 7 tens and 7 ones? = 77 (T) · What number has 2 tens and 9 ones? = 29 (A) · What number has 3 tens and 6 ones? = 36 (N) · What number has 4 tens and 2 ones? = 42 (C) · What number has 6 tens and 4 ones? = 64 (S) · What number has 8 tens and 7 ones? = 87 (D) · What number has 7 tens and 9 ones? = 79 (I) · What number has 4 tens and 5 ones? = 45 (H) · What number has 3 tens and 9 ones? = 39 (E) · What number has 8 tens and 2 ones? = 82 (P) · What number has 1 ten and 1 one? = 11 (M) · What number has 5 tens and 1 one? = 51 (G) · What number has 2 tens and 4 ones? = 24 (O) · What number has 1 ten and 5 ones? = 15 (U) · What number has 2 tens and 1 one? = 21 (R)

Clue 2 (Addition): "THE CONTROLS WERE USED BY A LEFTY"

$40 + 57 = 97$ (T) · $33 + 39 = 72$ (E) · $18 + 17 = 35$ (W) · $48 + 22 = 70$ (C) · $21 + 24 = 45$ (R) · $54 + 34 = 88$ (S) · $30 + 41 = 71$ (A) · $22 + 11 = 33$ (B) · $13 + 18 = 31$ (L) · $16 + 22 = 38$ (O) · $20 + 31 = 51$ (N) · $16 + 34 = 50$ (Y) · $34 + 24 = 58$ (D) · $24 + 32 = 56$ (F) · $17 + 38 = 55$ (H) · $9 + 20 = 29$ (U)

Clue 3 (Subtraction): "THE VILLAIN RAN AWAY FROM A MAGNET"

$87 - 27 = 60$ (T) · $105 - 38 = 67$ (V) · $85 - 40 = 45$ (O) · $59 - 38 = 21$ (H) · $31 - 14 = 17$ (A) · $82 - 29 = 53$ (M) · $14 - 3 = 11$ (W) · $51 - 14 = 37$ (I) · $48 - 22 = 26$ (R) · $63 - 40 = 23$ (G) · $25 - 10 = 15$ (F) · $51 - 37 = 14$ (N) · $109 - 36 = 73$ (L) · $103 - 37 = 66$ (E) · $66 - 15 = 51$ (Y)

Clue 4 (Skip counting): "WE FOUND A STRAND OF BLUE HAIR"

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, __, 140, 150 = 130 (W) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, __, 65, 70 = 60 (H) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, __, 22, 24 = 20 (D) · Skip-count by 3s. Fill the blank: 3, 6, __, 12, 15 = 9 (I) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 = 120 (U) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, __, 60, 65 = 55 (E) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, __, 55, 60 = 50 (T) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, __, 30, 33 = 27 (L) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 = 65 (N) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, __, 75, 80 = 70 (R) · Skip-count by 3s. Fill the blank: 3, 6, 9, __, 15, 18 = 12 (O) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, __, 100, 110 = 90 (B) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 = 26 (S) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, __, 45, 48 = 42 (A) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, __, 30, 32 = 28 (F)

Clue 5 (Missing addends): surviving statement is box 7 → Neil

$6 + \underline{\quad} = 10 = 4$ · $8 + \underline{\quad} = 16 = 8$ · $7 + \underline{\quad} = 9 = 2$ · $3 + \underline{\quad} = 14 = 11$ · $5 + \underline{\quad} = 8 = 3$ · $10 + \underline{\quad} = 15 = 5$ · $8 + \underline{\quad} = 20 = 12$ · $10 + \underline{\quad} = 11 = 1$ · $4 + \underline{\quad} = 14 = 10$ · $3 + \underline{\quad} = 12 = 9$ · $5 + \underline{\quad} = 11 = 6$