The Astro-Cat Space Station Mystery

Grade 1 math · Addition, Subtraction, Skip counting, Place value, Missing addends · Reading level grades 1-2

Detective: _____ **Date:** _____

Someone zapped the Chief Space Mechanic's laser wrench on Starbase Whisker Nine! Follow the clues around the space station to find out who did it.

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 Sneak is _____

Possible suspects

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

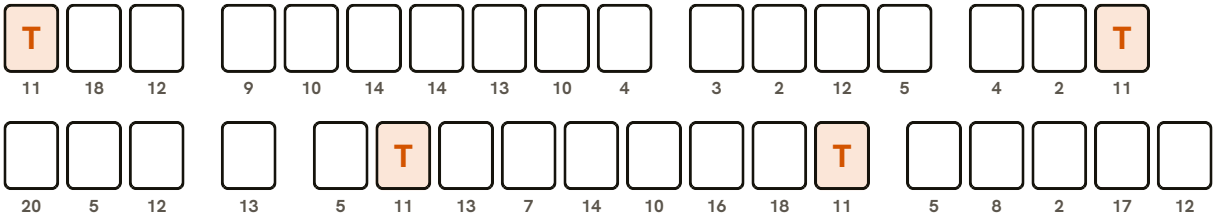
NAME	ROBOT GEAR	SPACE GADGET	GLOVE TYPE	FUR COLOR	DISLIKE
Ziggy Starcat	Plasma Shield	Moon Sensor	Right Paw Glove	Purple Fur	Loud Whistles
Pixel Pounce	Laser Boots	Cosmic Compass	Left Paw Glove	Purple Fur	Bright Beams
Captain Whiskers	Jet Pack	Star Map	Left Paw Glove	Neon Green Fur	Bright Beams
Vector Vince	Rocket Skates	Star Map	Right Paw Glove	Purple Fur	Loud Whistles
Turbo Toby	Laser Boots	Starlight Scope	Right Paw Glove	Orange Fur	Bright Beams
Cosmic Cleo	Laser Boots	Cosmic Compass	Left Paw Glove	Purple Fur	Loud Whistles
Rocket Rosie	Jet Pack	Astro Helm	Right Paw Glove	Purple Fur	Loud Whistles
Officer Socks	Laser Boots	Astro Helm	Left Paw Glove	Orange Fur	Bright Beams
Astro Spot	Laser Boots	Moon Sensor	Left Paw Glove	Purple Fur	Loud Whistles
Sparky Tails	Laser Boots	Starlight Scope	Right Paw Glove	Neon Green Fur	Squeaky Toys
Byte Barnaby	Plasma Shield	Moon Sensor	Left Paw Glove	Neon Green Fur	Loud Whistles
Commander Paws	Jet Pack	Astro Helm	Right Paw Glove	Purple Fur	Squeaky Toys
Cadet Boots	Rocket Skates	Star Map	Left Paw Glove	Purple Fur	Squeaky Toys
Pixel Penny	Plasma Shield	Star Map	Left Paw Glove	Orange Fur	Loud Whistles
Laser Luna	Rocket Skates	Astro Helm	Left Paw Glove	Neon Green Fur	Squeaky Toys
Gizmo Gracie	Plasma Shield	Starlight Scope	Right Paw Glove	Orange Fur	Squeaky Toys
Radar Rex	Laser Boots	Star Map	Left Paw Glove	Purple Fur	Loud Whistles
Orbit Ollie	Jet Pack	Cosmic Compass	Left Paw Glove	Purple Fur	Loud Whistles
Major Felix	Jet Pack	Starlight Scope	Left Paw Glove	Purple Fur	Loud Whistles
Bandit Buttons	Magnet Hook	Star Map	Right Paw Glove	Purple Fur	Loud Whistles
Comet Chester	Jet Pack	Moon Sensor	Right Paw Glove	Purple Fur	Bright Beams

make your own at mathcrackers.com

CLUE 1 Addition

> You add the space rocks gathered near the landing pad to get the first clue code.

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



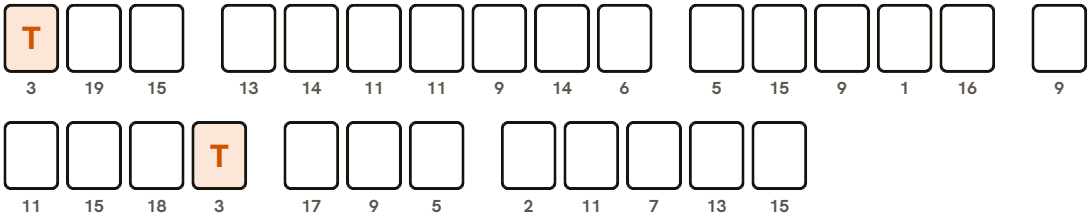
5 + 6 = ☐ → T	5 + 4 = ☐ → V	5 + 5 = ☐ → I	2 + 5 = ☐ → R
1 + 4 = ☐ → S	5 + 11 = ☐ → G	10 + 4 = ☐ → L	
2 + 1 = ☐ → D	6 + 2 = ☐ → C	7 + 5 = ☐ → E	6 + 7 = ☐ → A
1 + 1 = ☐ → O	3 + 1 = ☐ → N	7 + 11 = ☐ → H	
11 + 9 = ☐ → U	9 + 8 = ☐ → P		

Scratch space:

CLUE 2 Subtraction

You take away broken solar panels to uncover a hidden message.

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



5 - 2 = ☐ → T

20 - 2 = ☐ → F

19 - 6 = ☐ → V

2 - 1 = ☐ → R

20 - 1 = ☐ → H

17 - 8 = ☐ → A

12 - 5 = ☐ → O

18 - 3 = ☐ → E

19 - 8 = ☐ → L

11 - 9 = ☐ → G

19 - 2 = ☐ → P

18 - 2 = ☐ → S

11 - 5 = ☐ → N

8 - 3 = ☐ → W

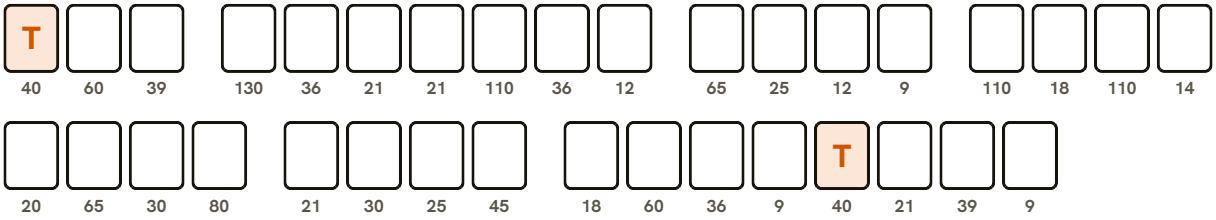
18 - 4 = ☐ → I

Scratch space:

CLUE 3 Skip counting

You count the shiny star tiles by twos along the hallway floor.

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



Skip-count by 10s. Fill the blank: 10, 20, 30, ___, 50, 60 ☐ → **T**

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

Skip-count by 3s. Fill the blank: 3, 6, ___, 12, 15 ☐ → **S**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, ___, 33, 36 ☐ → **O**

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

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, ___, 30, 35 ☐ → **U**

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

Skip-count by 5s. Fill the blank: 5, 10, 15, ___, 25, 30 ☐ → **F**

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

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, ___, 21, 24 ☐ → **W**

Skip-count by 3s. Fill the blank: 3, 6, 9, ___, 15, 18 ☐ → **N**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, ___, 50, 55 ☐ → **D**

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

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

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

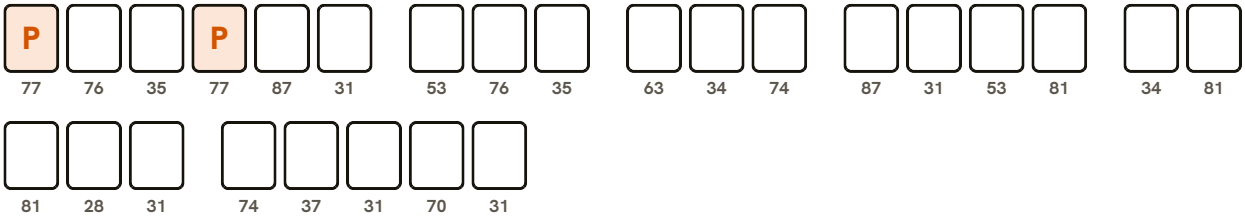
Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, ___, 140, 150 ☐ → **V**

Scratch space:

CLUE 4 Place value

You check the digit counters on the robot control board to read a note.

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



What number has 7 tens and 7 ones? ☐ → P

What number has 3 tens and 7 ones? ☐ → C

What number has 8 tens and 7 ones? ☐ → L

What number has 6 tens and 3 ones? ☐ → W

What number has 3 tens and 5 ones? ☐ → R

What number has 2 tens and 8 ones? ☐ → H

What number has 7 tens and 0 ones? ☐ → N

What number has 7 tens and 4 ones? ☐ → S

What number has 8 tens and 1 one? ☐ → T

What number has 5 tens and 3 ones? ☐ → F

What number has 7 tens and 6 ones? ☐ → U

What number has 3 tens and 4 ones? ☐ → A

What number has 3 tens and 1 one? ☐ → E

Scratch space:

CLUE 5 Missing addends - the last clue

You figure out how many energy cells are missing from the charging rack.

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:

4 + ___ = 12 ☐	3 + ___ = 10 ☐	7 + ___ = 11 ☐	9 + ___ = 15 ☐
6 + ___ = 11 ☐	3 + ___ = 15 ☐	10 + ___ = 11 ☐	6 + ___ = 16 ☐
5 + ___ = 14 ☐	3 + ___ = 5 ☐	4 + ___ = 15 ☐	

Step 2 - cross out the sentence with each answer:

1. The villain swung on magnet hook, then adjusted the astro helm.
2. The villain blocked with plasma shield, then checked the cosmic compass.
3. The villain dashed with laser boots, then checked the cosmic compass.
4. The villain dashed with laser boots, then read the star map.
5. The villain zipped on rocket skates, then checked the cosmic compass.
6. The villain zipped on rocket skates, then pinged the moon sensor.
7. The villain zoomed in with jet pack, then checked the cosmic compass.
8. The villain dashed with laser boots, then pinged the moon sensor.
9. The villain zoomed in with jet pack, then adjusted the astro helm.
10. The villain blocked with plasma shield, then read the star map.
11. The villain blocked with plasma shield, then scanned with starlight scope.
12. The villain zoomed in with jet pack, then read the star map.

TEACHER / PARENT

Answer Key

The Astro-Cat Space Station Mystery

Culprit: Cosmic Cleo

Laser Boots · Cosmic Compass · Left Paw Glove · Purple Fur · Loud Whistles

Trail: Start 21 → Clue 1 17 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE VILLAIN DOES NOT USE A STARLIGHT SCOPE"

5 + 6 = 11 (T) · 5 + 4 = 9 (V) · 5 + 5 = 10 (I) · 2 + 5 = 7 (R) · 1 + 4 = 5 (S) · 5 + 11 = 16 (G) · 10 + 4 = 14 (L) · 2 + 1 = 3 (D) · 6 + 2 = 8 (C) · 7 + 5 = 12 (E) · 6 + 7 = 13 (A) · 1 + 1 = 2 (O) · 3 + 1 = 4 (N) · 7 + 11 = 18 (H) · 11 + 9 = 20 (U) · 9 + 8 = 17 (P)

Clue 2 (Subtraction): "THE VILLAIN WEARS A LEFT PAW GLOVE"

5 - 2 = 3 (T) · 20 - 2 = 18 (F) · 19 - 6 = 13 (V) · 2 - 1 = 1 (R) · 20 - 1 = 19 (H) · 17 - 8 = 9 (A) · 12 - 5 = 7 (O) · 18 - 3 = 15 (E) · 19 - 8 = 11 (L) · 11 - 9 = 2 (G) · 19 - 2 = 17 (P) · 18 - 2 = 16 (S) · 11 - 5 = 6 (N) · 8 - 3 = 5 (W) · 18 - 4 = 14 (I)

Clue 3 (Skip counting): "THE VILLAIN RUNS AWAY FROM LOUD WHISTLES"

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

Clue 4 (Place value): "PURPLE FUR WAS LEFT AT THE SCENE"

What number has 7 tens and 7 ones? = 77 (P) · What number has 3 tens and 7 ones? = 37 (C) · What number has 8 tens and 7 ones? = 87 (L) · What number has 6 tens and 3 ones? = 63 (W) · What number has 3 tens and 5 ones? = 35 (R) · What number has 2 tens and 8 ones? = 28 (H) · What number has 7 tens and 0 ones? = 70 (N) · What number has 7 tens and 4 ones? = 74 (S) · What number has 8 tens and 1 one? = 81 (T) · What number has 5 tens and 3 ones? = 53 (F) · What number has 7 tens and 6 ones? = 76 (U) · What number has 3 tens and 4 ones? = 34 (A) · What number has 3 tens and 1 one? = 31 (E)

Clue 5 (Missing addends): surviving statement is box 3 → Cosmic Cleo

4 + ___ = 12 = 8 · 3 + ___ = 10 = 7 · 7 + ___ = 11 = 4 · 9 + ___ = 15 = 6 · 6 + ___ = 11 = 5 · 3 + ___ = 15 = 12 · 10 + ___ = 11 = 1 · 6 + ___ = 16 = 10 · 5 + ___ = 14 = 9 · 3 + ___ = 5 = 2 · 4 + ___ = 15 = 11