



The Great Cosmic Yarn Heist

Grade 4 math · Rounding, Addition, Subtraction, Multiplication, Division · Reading level grades 3-4

Detective: _____ Date: _____

A sneaky space-pirate cat has broken into the Yarn Station! They zipped away with the Golden Ball of Cosmic Yarn. Officer Paws needs your help to track down the naughty kitty and save the nebula.

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 Rogue Space Pirate is _____

Possible suspects

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

NAME	PRIMARY GEAR	SECONDARY TECH	DOMINANT PAW	CYBERNETIC PART	EFFECTIVE DEFENSE
Buster	Laser Cutlass	Hologram Decoy	Left Pawed	Rusty Metal Tail	Catnip Spray
Pixel	Laser Cutlass	Hologram Decoy	Left Pawed	Neon Green Helmet	Catnip Spray
Barnacles	Plasma Claw	Warp Booster	Right Pawed	Chrome Ears	Laser Pointer
Major Meow	Rocket Jetpack	Magnetic Boots	Right Pawed	Rusty Metal Tail	Laser Pointer
Luna	Plasma Claw	Magnetic Boots	Right Pawed	Chrome Ears	Water Blaster
Tuna Breath	Laser Cutlass	Warp Booster	Left Pawed	Rusty Metal Tail	Catnip Spray
Sprocket	Plasma Claw	Warp Booster	Left Pawed	Neon Green Helmet	Catnip Spray
Captain Claw	Gravity Grapple	Magnetic Boots	Left Pawed	Chrome Ears	Laser Pointer
Nova	Rocket Jetpack	Warp Booster	Left Pawed	Neon Green Helmet	Laser Pointer
Laser Claw	Rocket Jetpack	Magnetic Boots	Left Pawed	Chrome Ears	Catnip Spray
Nebula	Gravity Grapple	Sonic Meow	Left Pawed	Rusty Metal Tail	Laser Pointer
Scurvy	Laser Cutlass	Magnetic Boots	Left Pawed	Rusty Metal Tail	Catnip Spray
Boots	Laser Cutlass	Magnetic Boots	Left Pawed	Neon Green Helmet	Laser Pointer
Waffles	Plasma Claw	Cloaking Collar	Right Pawed	Rusty Metal Tail	Water Blaster
Rusty	Laser Cutlass	Warp Booster	Right Pawed	Rusty Metal Tail	Catnip Spray
Patch	Gravity Grapple	Cloaking Collar	Left Pawed	Rusty Metal Tail	Catnip Spray
Ziggy	Gravity Grapple	Magnetic Boots	Left Pawed	Rusty Metal Tail	Catnip Spray
Kitten Admiral	Gravity Grapple	Hologram Decoy	Right Pawed	Rusty Metal Tail	Catnip Spray
Stardust	Rocket Jetpack	Sonic Meow	Left Pawed	Chrome Ears	Catnip Spray
Barnaby	Cyber Eyepatch	Warp Booster	Right Pawed	Chrome Ears	Laser Pointer
Whiskers	Laser Cutlass	Sonic Meow	Left Pawed	Rusty Metal Tail	Water Blaster

CLUE 1

Our ship radar scanned the pirate ship fleeing. The warp engine speed rounded to the nearest ten gives us our first clue.

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

1300 900 230 7000 1100 50 50 130 1100 30 5000 1700 230 3700 30 1700 1300

900 130 7000 230 130 4300 50 1700 130 2900 1100 30 300 4300 1700 50 50 130 9000

Round 1,344 to the nearest hundred $\rightarrow$ **T**

Round 226 to the nearest ten $\rightarrow$ **E**

Round 4,291 to the nearest hundred $\rightarrow$ **C**

Round 5,364 to the nearest thousand $\rightarrow$ **D**

Round 7,346 to the nearest thousand $\rightarrow$ **V**

Round 1,714 to the nearest hundred $\rightarrow$

Round 3,654 to the nearest hundred $\rightarrow$

Round 2,903 to the nearest hundred $\rightarrow$ **K**

Round 9,103 to the nearest thousand → **R**

Round 1,142 to the nearest hundred $\rightarrow$

Round 51 to the nearest ten $\rightarrow$ **L**

Round 130 to the nearest ten $\rightarrow$ **A**

Round 925 to the nearest hundred $\rightarrow$ **H**

Round 26 to the nearest ten $\rightarrow$ **N**

Round 301 to the nearest hundred → **G**

Scratch space:

CLUE 2 Addition

We counted the spilled fish treats left in the escape cargo bay. Adding them up reveals the next pirate secret.

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

T							T											T
9763	8297	3833	6372	9516	3830	6609	9763	3833	2722	4028	3833	9458	6609	6103	3833	7674	9763	
6372	6609	8601	3833	9458	4636	3830	9516	6372										

$5409 + 4354 = \square \rightarrow \text{T}$	$2223 + 4386 = \square \rightarrow \text{A}$	$1607 + 1115 = \square \rightarrow \text{U}$
$1964 + 2672 = \square \rightarrow \text{G}$	$4974 + 3323 = \square \rightarrow \text{H}$	$1710 + 2120 = \square \rightarrow \text{R}$
$2375 + 5299 = \square \rightarrow \text{F}$	$3365 + 3007 = \square \rightarrow \text{P}$	$3266 + 6192 = \square \rightarrow \text{D}$
$1801 + 2032 = \square \rightarrow \text{E}$	$3043 + 5558 = \square \rightarrow \text{W}$	$4125 + 1978 = \square \rightarrow \text{L}$
$1304 + 2724 = \square \rightarrow \text{S}$	$4907 + 4609 = \square \rightarrow \text{I}$	

Scratch space:

CLUE 3

Subtraction

The pirate ship dropped some extra fuel cells during the getaway. Subtract the lost cells from the total to learn more.

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

T																		
5407	2109	3822	2926	4783	3822	8436	6448	1767	6600	8436	5407	2926	4783	3822	3822	2087	3822	8387
	T			T														
8436	5407	6600	8436	5407	4783	6727	7888											

$10354 - 4947 = \square \rightarrow \boxed{\text{T}}$

$9754 - 1318 = \square \rightarrow \boxed{\text{A}}$

$8400 - 1800 = \square \rightarrow \boxed{\text{C}}$

$4719 - 897 = \square \rightarrow \boxed{\text{E}}$

$8102 - 1375 = \square \rightarrow \boxed{\text{I}}$

$2769 - 1002 = \square \rightarrow \boxed{\text{Y}}$

$2993 - 67 = \square \rightarrow \boxed{\text{S}}$

$5070 - 287 = \square \rightarrow \boxed{\text{N}}$

$6051 - 3964 = \square \rightarrow \boxed{\text{Z}}$

$10388 - 3940 = \square \rightarrow \boxed{\text{K}}$

$4491 - 2382 = \square \rightarrow \boxed{\text{H}}$

$11691 - 3304 = \square \rightarrow \boxed{\text{D}}$

$12266 - 4378 = \square \rightarrow \boxed{\text{P}}$

Scratch space:

CLUE 4

Multiplication facts (1-12)

The pirate crew packed their laser yarn in equal rows. Multiply the crates to unlock this clue.

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

S					S					S									
49	100	11	132	108	49	120	20	11	4	49	21	8	10	25	21	132	2		
90	25	11	25	2	25	20	21												

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

$5 \times 4 = \square \rightarrow \boxed{\text{F}}$

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

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

$10 \times 10 = \square \rightarrow \boxed{\text{C}}$

$11 \times 12 = \square \rightarrow \boxed{\text{A}}$

$3 \times 7 = \square \rightarrow \boxed{\text{T}}$

$9 \times 10 = \square \rightarrow \boxed{\text{W}}$

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

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

$10 \times 12 = \square \rightarrow \boxed{\text{O}}$

$8 \times 1 = \square \rightarrow \boxed{\text{Y}}$

$12 \times 9 = \square \rightarrow \boxed{\text{P}}$

$1 \times 4 = \square \rightarrow \boxed{\text{U}}$

Scratch space:

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

We need to divide the remaining space tuna cans equally among our scout ships. This division gives us the final detail.

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:

$32 \div 4 = \boxed{}$

$7 \div 7 = \boxed{}$

$144 \div 12 = \boxed{}$

$132 \div 12 = \boxed{}$

$9 \div 3 = \boxed{}$

$30 \div 5 = \boxed{}$

$28 \div 7 = \boxed{}$

$18 \div 2 = \boxed{}$

$42 \div 6 = \boxed{}$

$6 \div 3 = \boxed{}$

$100 \div 10 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain fired a gravity grapple, then stomped with magnetic boots.
2. The villain swung a laser cutlass, then turned on a cloaking collar.
3. The villain adjusted a cyber eyepatch, then unleashed a sonic meow.
4. The villain adjusted a cyber eyepatch, then activated a warp booster.
5. The villain swung a laser cutlass, then activated a warp booster.
6. The villain fired a gravity grapple, then threw a hologram decoy.
7. The villain fired a gravity grapple, then turned on a cloaking collar.
8. The villain swung a laser cutlass, then threw a hologram decoy.
9. The villain ignited a rocket jetpack, then turned on a cloaking collar.
10. The villain swiped a plasma claw, then turned on a cloaking collar.
11. The villain ignited a rocket jetpack, then activated a warp booster.
12. The villain swung a laser cutlass, then stomped with magnetic boots.

Answer Key

The Great Cosmic Yarn Heist

Culprit: Tuna Breath

Laser Cutlass · Warp Booster · Left Pawed · Rusty Metal Tail · Catnip Spray

Trail: Start 21 → Clue 1 19 → Clue 2 13 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE VILLAIN DOES NOT HAVE A CLOAKING COLLAR"

Round 1,344 to the nearest hundred = 1300 (T) · Round 226 to the nearest ten = 230 (E) · Round 4,291 to the nearest hundred = 4300 (C) · Round 5,364 to the nearest thousand = 5000 (D) · Round 7,346 to the nearest thousand = 7000 (V) · Round 1,714 to the nearest hundred = 1700 (O) · Round 3,654 to the nearest hundred = 3700 (S) · Round 2,903 to the nearest hundred = 2900 (K) · Round 9,103 to the nearest thousand = 9000 (R) · Round 1,142 to the nearest hundred = 1100 (I) · Round 51 to the nearest ten = 50 (L) · Round 130 to the nearest ten = 130 (A) · Round 925 to the nearest hundred = 900 (H) · Round 26 to the nearest ten = 30 (N) · Round 301 to the nearest hundred = 300 (G)

Clue 2 (Addition): "THE PIRATE USED A LEFT PAWED GRIP"

$5409 + 4354 = 9763$ (T) · $2223 + 4386 = 6609$ (A) · $1607 + 1115 = 2722$ (U) · $1964 + 2672 = 4636$ (G) · $4974 + 3323 = 8297$ (H) · $1710 + 2120 = 3830$ (R) · $2375 + 5299 = 7674$ (F) · $3365 + 3007 = 6372$ (P) · $3266 + 6192 = 9458$ (D) · $1801 + 2032 = 3833$ (E) · $3043 + 5558 = 8601$ (W) · $4125 + 1978 = 6103$ (L) · $1304 + 2724 = 4028$ (S) · $4907 + 4609 = 9516$ (I)

Clue 3 (Subtraction): "THE SNEAKY CAT SNEEZED AT CATNIP"

$10354 - 4947 = 5407$ (T) · $9754 - 1318 = 8436$ (A) · $8400 - 1800 = 6600$ (C) · $4719 - 897 = 3822$ (E) · $8102 - 1375 = 6727$ (I) · $2769 - 1002 = 1767$ (Y) · $2993 - 67 = 2926$ (S) · $5070 - 287 = 4783$ (N) · $6051 - 3964 = 2087$ (Z) · $10388 - 3940 = 6448$ (K) · $4491 - 2382 = 2109$ (H) · $11691 - 3304 = 8387$ (D) · $12266 - 4378 = 7888$ (P)

Clue 4 (Multiplication facts (1-12)): "SCRAPS OF RUSTY METAL WERE LEFT"

$7 \times 7 = 49$ (S) · $5 \times 4 = 20$ (F) · $1 \times 2 = 2$ (L) · $1 \times 10 = 10$ (M) · $10 \times 10 = 100$ (C) · $11 \times 12 = 132$ (A) · $3 \times 7 = 21$ (T) · $9 \times 10 = 90$ (W) · $5 \times 5 = 25$ (E) · $11 \times 1 = 11$ (R) · $10 \times 12 = 120$ (O) · $8 \times 1 = 8$ (Y) · $12 \times 9 = 108$ (P) · $1 \times 4 = 4$ (U)

Clue 5 (Division facts (1-12)): surviving statement is box 5 → Tuna Breath

$32 \div 4 = 8$ · $7 \div 7 = 1$ · $144 \div 12 = 12$ · $132 \div 12 = 11$ · $9 \div 3 = 3$ · $30 \div 5 = 6$ · $28 \div 7 = 4$ · $18 \div 2 = 9$ · $42 \div 6 = 7$ · $6 \div 3 = 2$ · $100 \div 10 = 10$