



The Case of the Missing Mega-Core

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

Detective: _____ Date: _____

Someone broke into the central power plant and took the Golden Mega-Core! Robo-City will lose power unless we find the Rogue Robot 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 Rogue Robot is _____

Possible suspects

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

NAME	PRIMARY TOOL	BACKUP GADGET	LED SCAN DIRECTION	ANTENNA LIGHT	SYSTEM VULNERABILITY
Wallie	Magnet Arm	Hologram Projector	Vertical Blink	Neon Green Glow	Strong Magnets
Optimus	Magnet Arm	Grappling Hook	Horizontal Sweep	Bright Yellow Spark	Water Splashes
Clank	Laser Welder	Hologram Projector	Horizontal Sweep	Neon Green Glow	Static Electricity
Vector	Laser Welder	Hologram Projector	Vertical Blink	Neon Green Glow	Static Electricity
Geary	Rocket Thruster	Grappling Hook	Horizontal Sweep	Neon Green Glow	Static Electricity
Widget	Plasma Cutter	Force Field	Vertical Blink	Neon Green Glow	Static Electricity
Copper	Sonic Drill	Radar Scanner	Vertical Blink	Neon Green Glow	Static Electricity
Zippy	Plasma Cutter	Smoke Screen	Vertical Blink	Neon Green Glow	Static Electricity
Data	Magnet Arm	Force Field	Vertical Blink	Bright Yellow Spark	Static Electricity
Sprocket	Plasma Cutter	Hologram Projector	Vertical Blink	Neon Green Glow	Strong Magnets
Albie	Plasma Cutter	Grappling Hook	Vertical Blink	Neon Green Glow	Water Splashes
Tinny	Sonic Drill	Smoke Screen	Horizontal Sweep	Bright Yellow Spark	Strong Magnets
Buster	Laser Welder	Radar Scanner	Vertical Blink	Neon Green Glow	Water Splashes
Bender	Laser Welder	Grappling Hook	Vertical Blink	Bright Yellow Spark	Static Electricity
Beep	Rocket Thruster	Force Field	Vertical Blink	Bright Yellow Spark	Strong Magnets
Gizmo	Laser Welder	Grappling Hook	Vertical Blink	Neon Green Glow	Water Splashes
Eve	Plasma Cutter	Grappling Hook	Horizontal Sweep	Ruby Red Flash	Strong Magnets
Rusty	Magnet Arm	Grappling Hook	Vertical Blink	Neon Green Glow	Static Electricity
Circuit	Sonic Drill	Grappling Hook	Horizontal Sweep	Neon Green Glow	Static Electricity
Sparky	Sonic Drill	Hologram Projector	Vertical Blink	Bright Yellow Spark	Static Electricity
Megatron	Plasma Cutter	Force Field	Vertical Blink	Ruby Red Flash	Strong Magnets

CLUE 1 Place value

We plug the broken decoder chip into our computer. To read the first file, we must find the digit in the hundreds place of the chip's serial code.

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

A number line from 0 to 10000. The line is marked with the following numbers in boxes: 30, 300, 60, 4000, 100, 5000, 5000, 900, 100, 700, 1000, 400, 60, 20, 700, 400, 30. The number 30 is highlighted in orange.

What is the value of the 3 in 639? → **T**

What is the value of the 2 in 126? → **S**

What is the value of the 3 in 1,309? → **H**

What is the value of the 5 in 3,538? → **C**

What is the value of the 9 in 69,183? → **U**

What is the value of the 7 in 174? → **R**

What is the value of the 6 in 4,160? → **E**

What is the value of the 7 in 791? → **N**

What is the value of the 1 in 1,563? → **D**

What is the value of the 6 in 681? → **F**

What is the value of the 1 in 7,147? →

What is the value of the 9 in 928? → **A**

What is the value of the 4 in 475? →

What is the value of the 4 in 84,519? → **V**

What is the value of the 5 in 65,336? → **L**

Scratch space:

CLUE 2 Addition

To open the security locker, we need to add the total number of spare gears found on the workbench and type the sum into the keypad.

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

T							T					T							
344	499	944	308	835	973	374	344	507	728	397	635	397	344	635	374	689	442	555	319
	T						T												
689	344	319	374	944	279	578	944	728	344	689	342	835	374	374	507				

$169 + 175 = \square \rightarrow$ T	$192 + 116 = \square \rightarrow$ F	$174 + 404 = \square \rightarrow$ V
$151 + 128 = \square \rightarrow$ D	$584 + 251 = \square \rightarrow$ A	$473 + 255 = \square \rightarrow$ R
$245 + 254 = \square \rightarrow$ H	$257 + 117 = \square \rightarrow$ L	$339 + 634 = \square \rightarrow$ U
$244 + 153 = \square \rightarrow$ O	$275 + 280 = \square \rightarrow$ K	$138 + 204 = \square \rightarrow$ C
$464 + 225 = \square \rightarrow$ I	$299 + 143 = \square \rightarrow$ N	$472 + 472 = \square \rightarrow$ E
$191 + 316 = \square \rightarrow$ Y	$388 + 247 = \square \rightarrow$ B	$115 + 204 = \square \rightarrow$ S

Scratch space:

CLUE 3

Multiplication facts (1-12)

The warehouse floor has rows of storage crates. By multiplying the rows of crates by the boxes in each row, we find the secret room code.

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

S																			
96	6	56	6	35	64	90	108	90	64	6	44	35	64	35	6	81			
			S											S			S		
80	56	45	96	6	10	90	4	35	108	108	56	35	48	96	3	90	56	44	96

$8 \times 12 = \square \rightarrow \text{S}$

$1 \times 3 = \square \rightarrow \text{G}$

$9 \times 9 = \square \rightarrow \text{Y}$

$1 \times 10 = \square \rightarrow \text{H}$

$9 \times 5 = \square \rightarrow \text{M}$

$7 \times 5 = \square \rightarrow \text{I}$

$12 \times 9 = \square \rightarrow \text{L}$

$4 \times 1 = \square \rightarrow \text{V}$

$9 \times 10 = \square \rightarrow \text{E}$

$6 \times 1 = \square \rightarrow \text{T}$

$7 \times 8 = \square \rightarrow \text{A}$

$11 \times 4 = \square \rightarrow \text{R}$

$8 \times 10 = \square \rightarrow \text{J}$

$8 \times 8 = \square \rightarrow \text{C}$

$8 \times 6 = \square \rightarrow \text{N}$

Scratch space:

CLUE 4 Subtraction

We need to override the energy grid. We subtract the drained battery packs from the fully charged ones to find how many power units are left.

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

W																		
202	430	196	163	803	738	663	738	430	163	738	477	463	430	430	738			
			W															
477	670	163	202	397	289	463	797	331	289	199	199	760	430	331	518	430	738	430

$227 - 25 = \square \rightarrow$ W	$473 - 10 = \square \rightarrow$ R	$446 - 250 = \square \rightarrow$ F
$915 - 397 = \square \rightarrow$ C	$630 - 299 = \square \rightarrow$ S	$908 - 111 = \square \rightarrow$ K
$567 - 278 = \square \rightarrow$ A	$960 - 157 = \square \rightarrow$ U	$1036 - 366 = \square \rightarrow$ L
$608 - 211 = \square \rightarrow$ M	$817 - 154 = \square \rightarrow$ D	$565 - 135 = \square \rightarrow$ E
$461 - 298 = \square \rightarrow$ O	$319 - 120 = \square \rightarrow$ T	$773 - 13 = \square \rightarrow$ H
$581 - 104 = \square \rightarrow$ G	$1102 - 364 = \square \rightarrow$ N	

Scratch space:

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

We must share the emergency oil canisters equally among the helper bots. Dividing the cans tells us the final number we need to open the safe.

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:

$18 \div 3 = \boxed{}$

$30 \div 3 = \boxed{}$

$22 \div 11 = \boxed{}$

$7 \div 7 = \boxed{}$

$54 \div 6 = \boxed{}$

$6 \div 2 = \boxed{}$

$77 \div 11 = \boxed{}$

$25 \div 5 = \boxed{}$

$48 \div 4 = \boxed{}$

$132 \div 12 = \boxed{}$

$72 \div 9 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain melts the security locks into liquid metal, then blocks the laser darts with an energy shield.
2. The villain slices through the heavy steel vault gate, then confuses the guards with duplicate images.
3. The villain drills a massive hole through the concrete floor, then confuses the guards with duplicate images.
4. The villain drills a massive hole through the concrete floor, then tracks the cleanest escape path through the vents.
5. The villain slices through the heavy steel vault gate, then escapes into a cloud of thick gray mist.
6. The villain yanks the metal power box off the wall, then swings away using a long steel cable.
7. The villain drills a massive hole through the concrete floor, then swings away using a long steel cable.
8. The villain drills a massive hole through the concrete floor, then blocks the laser darts with an energy shield.
9. The villain melts the security locks into liquid metal, then confuses the guards with duplicate images.
10. The villain melts the security locks into liquid metal, then escapes into a cloud of thick gray mist.
11. The villain blasts into the sky with a loud roar, then tracks the cleanest escape path through the vents.
12. The villain melts the security locks into liquid metal, then swings away using a long steel cable.

Answer Key

The Case of the Missing Mega-Core

Culprit: Copper

Sonic Drill · Radar Scanner · Vertical Blink · Neon Green Glow · Static Electricity

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

Clue 1 (Place value): "THE VILLAIN DOES NOT USE A FORCE FIELD"

What is the value of the 3 in 639? = 30 (T) · What is the value of the 2 in 126? = 20 (S) · What is the value of the 3 in 1,309? = 300 (H) · What is the value of the 5 in 3,538? = 500 (C) · What is the value of the 9 in 69,183? = 9000 (U) · What is the value of the 7 in 174? = 70 (R) · What is the value of the 6 in 4,160? = 60 (E) · What is the value of the 7 in 791? = 700 (N) · What is the value of the 1 in 1,563? = 1000 (D) · What is the value of the 6 in 681? = 600 (F) · What is the value of the 1 in 7,147? = 100 (I) · What is the value of the 9 in 928? = 900 (A) · What is the value of the 4 in 475? = 400 (O) · What is the value of the 4 in 84,519? = 4000 (V) · What is the value of the 5 in 65,336? = 5000 (L)

Clue 2 (Addition): "THE FAULTY ROBOT BLINKS ITS LED VERTICALLY"

169 + 175 = 344 (T) · 192 + 116 = 308 (F) · 174 + 404 = 578 (V) · 151 + 128 = 279 (D) · 584 + 251 = 835 (A) · 473 + 255 = 728 (R) · 245 + 254 = 499 (H) · 257 + 117 = 374 (L) · 339 + 634 = 973 (U) · 244 + 153 = 397 (O) · 275 + 280 = 555 (K) · 138 + 204 = 342 (C) · 464 + 225 = 689 (I) · 299 + 143 = 442 (N) · 472 + 472 = 944 (E) · 191 + 316 = 507 (Y) · 388 + 247 = 635 (B) · 115 + 204 = 319 (S)

Clue 3 (Multiplication facts (1-12)): "STATIC ELECTRICITY JAMS THE VILLAINS GEARS"

8 × 12 = 96 (S) · 1 × 3 = 3 (G) · 9 × 9 = 81 (Y) · 1 × 10 = 10 (H) · 9 × 5 = 45 (M) · 7 × 5 = 35 (I) · 12 × 9 = 108 (L) · 4 × 1 = 4 (V) · 9 × 10 = 90 (E) · 6 × 1 = 6 (T) · 7 × 8 = 56 (A) · 11 × 4 = 44 (R) · 8 × 10 = 80 (J) · 8 × 8 = 64 (C) · 8 × 6 = 48 (N)

Clue 4 (Subtraction): "WE FOUND NEON GREEN GLOW MARKS AT THE SCENE"

227 - 25 = 202 (W) · 473 - 10 = 463 (R) · 446 - 250 = 196 (F) · 915 - 397 = 518 (C) · 630 - 299 = 331 (S) · 908 - 111 = 797 (K) · 567 - 278 = 289 (A) · 960 - 157 = 803 (U) · 1036 - 366 = 670 (L) · 608 - 211 = 397 (M) · 817 - 154 = 663 (D) · 565 - 135 = 430 (E) · 461 - 298 = 163 (O) · 319 - 120 = 199 (T) · 773 - 13 = 760 (H) · 581 - 104 = 477 (G) · 1102 - 364 = 738 (N)

Clue 5 (Division facts (1-12)): surviving statement is box 4 → Copper

18 ÷ 3 = 6 · 30 ÷ 3 = 10 · 22 ÷ 11 = 2 · 7 ÷ 7 = 1 · 54 ÷ 6 = 9 · 6 ÷ 2 = 3 · 77 ÷ 11 = 7 · 25 ÷ 5 = 5 · 48 ÷ 4 = 12 · 132 ÷ 12 = 11 · 72 ÷ 9 = 8