The Mystery of the Rogue Bot

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

Detective: _____ **Date:** _____

A rogue bot snuck into the main lab during the Gearspark Expo and scrambled the master blueprints! Solve the math clues to uncover which bot went rogue before the final showcase.

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 Bot 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	GADGET	STATUS LIGHT	WIRE COLOR	SYSTEM GLITCH
Dean Kamen	Laser Cutter	Rocket Boots	Steady Blue Light	Bright Silver Wires	Bright Flash
Joseph Engelberger	Sonic Drill	Rocket Boots	Blinking Red Light	Copper Red Wires	Water Splash
Rodney Brooks	Magnet Arm	EMP Blaster	Steady Blue Light	Copper Red Wires	Bright Flash
Nikola Tesla	Turbo Jetpack	Spark Shield	Steady Blue Light	Neon Yellow Wires	Bright Flash
Isaac Asimov	Magnet Arm	EMP Blaster	Blinking Red Light	Copper Red Wires	Magnet Trap
Ayanna Howard	Laser Cutter	Oil Cannon	Steady Blue Light	Bright Silver Wires	Bright Flash
Marc Raibert	Plasma Welder	Smoke Screen	Blinking Red Light	Bright Silver Wires	Water Splash
Katherine Johnson	Turbo Jetpack	Oil Cannon	Steady Blue Light	Copper Red Wires	Bright Flash
Hedy Lamarr	Turbo Jetpack	Oil Cannon	Blinking Red Light	Bright Silver Wires	Bright Flash
Norbert Wiener	Plasma Welder	Smoke Screen	Steady Blue Light	Copper Red Wires	Bright Flash
Takeo Kanade	Magnet Arm	EMP Blaster	Blinking Red Light	Copper Red Wires	Water Splash
Alan Turing	Magnet Arm	Spark Shield	Blinking Red Light	Copper Red Wires	Water Splash
Sebastian Thrun	Magnet Arm	Rocket Boots	Blinking Red Light	Copper Red Wires	Bright Flash
George Devol	Plasma Welder	Spark Shield	Steady Blue Light	Bright Silver Wires	Magnet Trap
Charles Babbage	Magnet Arm	Oil Cannon	Blinking Red Light	Neon Yellow Wires	Water Splash
Cynthia Breazeal	Magnet Arm	Oil Cannon	Blinking Red Light	Bright Silver Wires	Magnet Trap
Radia Perlman	Sonic Drill	EMP Blaster	Steady Blue Light	Bright Silver Wires	Water Splash
Dorothy Vaughan	Laser Cutter	Rocket Boots	Steady Blue Light	Copper Red Wires	Bright Flash
Ada Lovelace	Turbo Jetpack	Rocket Boots	Steady Blue Light	Copper Red Wires	Bright Flash
Fei-Fei Li	Magnet Arm	EMP Blaster	Steady Blue Light	Neon Yellow Wires	Magnet Trap
Margaret Hamilton	Plasma Welder	Spark Shield	Steady Blue Light	Copper Red Wires	Water Splash

CLUE 1 Multiplication facts (1-12)

> Detective Lin finds rows of charging docks in the workshop. Multiplying the rows by the docks per row unlocks the first clue.

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

T																	T		
54	120	81	8	45	63	63	10	45	25	72	15	81	21	25	15	54			
121	21	81	10	25	15	45	63	36	10	25	25	15	25						

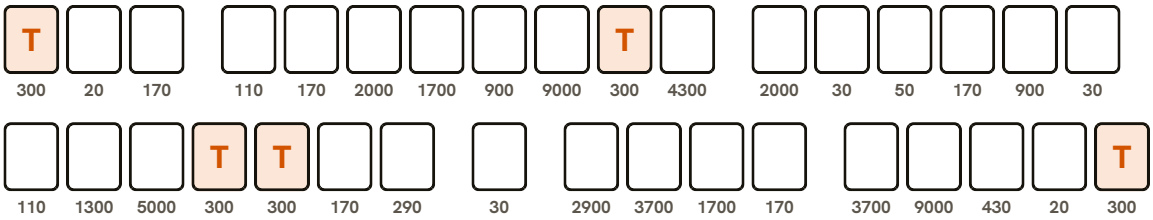
6 × 9 = ☐ → T	5 × 9 = ☐ → I	9 × 7 = ☐ → L	2 × 4 = ☐ → V
12 × 10 = ☐ → H	5 × 3 = ☐ → O	9 × 9 = ☐ → E	
9 × 4 = ☐ → C	6 × 12 = ☐ → D	10 × 1 = ☐ → A	
11 × 11 = ☐ → U	5 × 5 = ☐ → N	7 × 3 = ☐ → S	

Scratch space:

CLUE 2 Rounding

> The main scanner readout rounds total energy usage to the nearest hundred. The rounded number reveals the second clue.

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



Round 327 to the nearest hundred ☐ → **T**

Round 1,703 to the nearest hundred ☐ → **U**

Round 4,975 to the nearest thousand ☐ → **O**

Round 53 to the nearest ten ☐ → **M**

Round 29 to the nearest ten ☐ → **A**

Round 2,886 to the nearest hundred ☐ → **B**

Round 2,313 to the nearest thousand ☐ → **C**

Round 852 to the nearest hundred ☐ → **R**

Round 1,277 to the nearest hundred ☐ → **P**

Round 3,668 to the nearest hundred ☐ → **L**

Round 427 to the nearest ten ☐ → **G**

Round 4,257 to the nearest hundred ☐ → **Y**

Round 172 to the nearest ten ☐ → **E**

Round 293 to the nearest ten ☐ → **D**

Round 21 to the nearest ten ☐ → **H**

Round 9,405 to the nearest thousand ☐ → **I**

Round 107 to the nearest ten ☐ → **S**

Scratch space:

CLUE 3 Addition

> Lin counts up all the extra gear gears gathered from the workbench. Adding the piles together unlocks the third clue.

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



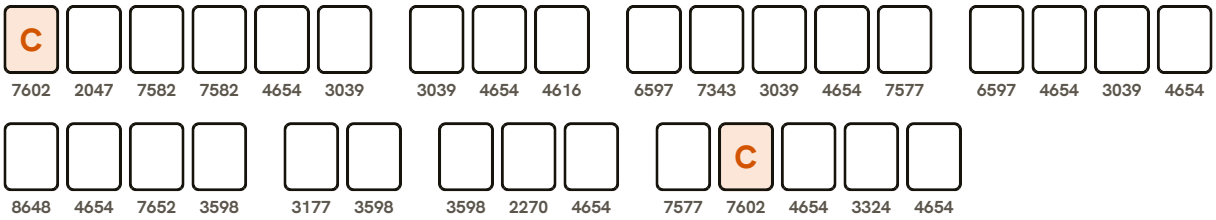
3843 + 2626 = ☐ → A	2365 + 1982 = ☐ → N	2569 + 4511 = ☐ → B
2661 + 2229 = ☐ → E	1770 + 3730 = ☐ → D	2373 + 1620 = ☐ → F
3021 + 6395 = ☐ → H	3276 + 3149 = ☐ → O	4216 + 3636 = ☐ → G
3626 + 3691 = ☐ → C	2821 + 4888 = ☐ → I	3333 + 2291 = ☐ → S
3641 + 2737 = ☐ → L	2447 + 2657 = ☐ → U	3636 + 5195 = ☐ → R
2538 + 4881 = ☐ → T		

Scratch space:

CLUE 4 Subtraction

> Lin compares battery charge before and after the incident. Subtracting the numbers shows the exact secret value for clue four.

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



11825 - 4223 = ☐ → C	8895 - 1318 = ☐ → S	8313 - 3697 = ☐ → D
11801 - 4149 = ☐ → F	4882 - 1284 = ☐ → T	9328 - 1746 = ☐ → P
8126 - 783 = ☐ → I	11893 - 3245 = ☐ → L	8541 - 3887 = ☐ → E
7368 - 4191 = ☐ → A	4651 - 2381 = ☐ → H	4536 - 1212 = ☐ → N
5813 - 3766 = ☐ → O	3240 - 201 = ☐ → R	11110 - 4513 = ☐ → W

Scratch space:

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

> Lin splits the total diagnostic microchips equally among the security stations. Dividing the stack unlocks the final clue.

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:

48 ÷ 12 = ☐	33 ÷ 3 = ☐	24 ÷ 8 = ☐	1 ÷ 1 = ☐	35 ÷ 5 = ☐
40 ÷ 5 = ☐	48 ÷ 8 = ☐	27 ÷ 3 = ☐	48 ÷ 4 = ☐	120 ÷ 12 = ☐
60 ÷ 12 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain sparks a plasma welder, then blasts an emp wave.
2. The villain swings a magnet arm, then blasts an emp wave.
3. The villain uses a laser cutter, then activates rocket boots.
4. The villain fires a turbo jetpack, then activates rocket boots.
5. The villain swings a magnet arm, then activates rocket boots.
6. The villain sparks a plasma welder, then raises a spark shield.
7. The villain uses a laser cutter, then launches a smoke screen.
8. The villain swings a magnet arm, then deploys an oil cannon.
9. The villain uses a laser cutter, then deploys an oil cannon.
10. The villain revs a sonic drill, then blasts an emp wave.
11. The villain sparks a plasma welder, then launches a smoke screen.
12. The villain revs a sonic drill, then raises a spark shield.

TEACHER / PARENT

Answer Key

The Mystery of the Rogue Bot

Culprit: Rodney Brooks

Magnet Arm · EMP Blaster · Steady Blue Light · Copper Red Wires · Bright Flash

Trail: Start 21 → Clue 1 16 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE AN OIL CANNON"

6 × 9 = 54 (T) · 5 × 9 = 45 (I) · 9 × 7 = 63 (L) · 2 × 4 = 8 (V) · 12 × 10 = 120 (H) · 5 × 3 = 15 (O) · 9 × 9 = 81 (E) · 9 × 4 = 36 (C) · 6 × 12 = 72 (D) · 10 × 1 = 10 (A) · 11 × 11 = 121 (U) · 5 × 5 = 25 (N) · 7 × 3 = 21 (S)

Clue 2 (Rounding): "THE SECURITY CAMERA SPOTTED A BLUE LIGHT"

Round 327 to the nearest hundred = 300 (T) · Round 1,703 to the nearest hundred = 1700 (U) · Round 4,975 to the nearest thousand = 5000 (O) · Round 53 to the nearest ten = 50 (M) · Round 29 to the nearest ten = 30 (A) · Round 2,886 to the nearest hundred = 2900 (B) · Round 2,313 to the nearest thousand = 2000 (C) · Round 852 to the nearest hundred = 900 (R) · Round 1,277 to the nearest hundred = 1300 (P) · Round 3,668 to the nearest hundred = 3700 (L) · Round 427 to the nearest ten = 430 (G) · Round 4,257 to the nearest hundred = 4300 (Y) · Round 172 to the nearest ten = 170 (E) · Round 293 to the nearest ten = 290 (D) · Round 21 to the nearest ten = 20 (H) · Round 9,405 to the nearest thousand = 9000 (I) · Round 107 to the nearest ten = 110 (S)

Clue 3 (Addition): "A FLASH OF BRIGHT LIGHT CONFUSED THE BOT"

3843 + 2626 = 6469 (A) · 2365 + 1982 = 4347 (N) · 2569 + 4511 = 7080 (B) · 2661 + 2229 = 4890 (E) · 1770 + 3730 = 5500 (D) · 2373 + 1620 = 3993 (F) · 3021 + 6395 = 9416 (H) · 3276 + 3149 = 6425 (O) · 4216 + 3636 = 7852 (G) · 3626 + 3691 = 7317 (C) · 2821 + 4888 = 7709 (I) · 3333 + 2291 = 5624 (S) · 3641 + 2737 = 6378 (L) · 2447 + 2657 = 5104 (U) · 3636 + 5195 = 8831 (R) · 2538 + 4881 = 7419 (T)

Clue 4 (Subtraction): "COPPER RED WIRES WERE LEFT AT THE SCENE"

11825 - 4223 = 7602 (C) · 8895 - 1318 = 7577 (S) · 8313 - 3697 = 4616 (D) · 11801 - 4149 = 7652 (F) · 4882 - 1284 = 3598 (T) · 9328 - 1746 = 7582 (P) · 8126 - 783 = 7343 (I) · 11893 - 3245 = 8648 (L) · 8541 - 3887 = 4654 (E) · 7368 - 4191 = 3177 (A) · 4651 - 2381 = 2270 (H) · 4536 - 1212 = 3324 (N) · 5813 - 3766 = 2047 (O) · 3240 - 201 = 3039 (R) · 11110 - 4513 = 6597 (W)

Clue 5 (Division facts (1-12)): surviving statement is box 2 → Rodney Brooks

48 ÷ 12 = 4 · 33 ÷ 3 = 11 · 24 ÷ 8 = 3 · 1 ÷ 1 = 1 · 35 ÷ 5 = 7 · 40 ÷ 5 = 8 · 48 ÷ 8 = 6 · 27 ÷ 3 = 9 · 48 ÷ 4 = 12 · 120 ÷ 12 = 10 · 60 ÷ 12 = 5