The Glitch at Block Grid Citadel

Grade 4 math · Place value, Fractions of a number, Rounding, Addition · Reading level grades 3-4

Detective: _____ **Date:** _____

A wild Rogue Bot has scrambled the blueprints at Block Grid Citadel! Track down the evidence and find out which suspect built the stray bot.

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.

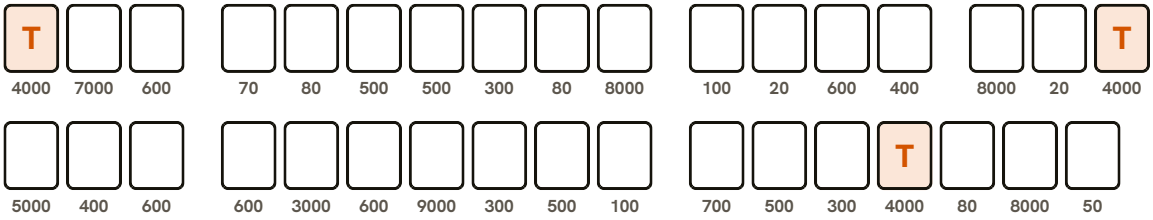
NAME	ROBOT MODULE	BLOCK ARMOR	SENSOR STATUS	ANTENNA STYLE	GLITCH TRIGGER
Forger Frank	Rocket Thruster	Copper Casing	Left Sensor Glowing	Dish Antenna	Lava Bucket
Volt Victor	Piston Arm	Redstone Core	Right Sensor Glowing	Cube Antenna	Redstone Signal
Gearhead Sam	Rocket Thruster	Emerald Plating	Left Sensor Glowing	Cube Antenna	Redstone Signal
Logic Luke	Rocket Thruster	Emerald Plating	Right Sensor Glowing	Cube Antenna	Splash of Water
Data Nora	Laser Cannon	Copper Casing	Left Sensor Glowing	Cube Antenna	Splash of Water
Robo Rita	Rocket Thruster	Emerald Plating	Right Sensor Glowing	Cube Antenna	Lava Bucket
Coder Clara	Magnetic Grabber	Redstone Core	Left Sensor Glowing	Spun Wire Antenna	Lava Bucket
Rusty Rex	Magnetic Grabber	Copper Casing	Right Sensor Glowing	Cube Antenna	Redstone Signal
Widget Wally	Sonic Screech	Redstone Core	Right Sensor Glowing	Dish Antenna	Splash of Water
Digit Dave	Laser Cannon	Emerald Plating	Left Sensor Glowing	Spun Wire Antenna	Redstone Signal
Sparky Stan	Sonic Screech	Copper Casing	Left Sensor Glowing	Spun Wire Antenna	Redstone Signal
Byte Bella	Laser Cannon	Emerald Plating	Right Sensor Glowing	Spun Wire Antenna	Splash of Water
Blocky Bob	Laser Cannon	Emerald Plating	Right Sensor Glowing	Dish Antenna	Redstone Signal
Builder Alex	Piston Arm	Redstone Core	Left Sensor Glowing	Dish Antenna	Splash of Water
Chip Charlie	Laser Cannon	Obsidian Shell	Right Sensor Glowing	Cube Antenna	Splash of Water
Vector Max	Magnetic Grabber	Redstone Core	Right Sensor Glowing	Cube Antenna	Splash of Water
Crafty Ben	Piston Arm	Emerald Plating	Right Sensor Glowing	Dish Antenna	Redstone Signal
Tinker Tim	Piston Arm	Diamond Shield	Right Sensor Glowing	Dish Antenna	Splash of Water
Anvil Amy	Piston Arm	Redstone Core	Right Sensor Glowing	Cube Antenna	Splash of Water
Matrix Mia	Sonic Screech	Emerald Plating	Left Sensor Glowing	Dish Antenna	Lava Bucket
Sprocket Sue	Piston Arm	Diamond Shield	Right Sensor Glowing	Cube Antenna	Splash of Water

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CLUE 1 Place value

The security terminal displays the villain's code in digital digits. Read the place value to clear the noise.

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



What is the value of the 4 in 4,606? ☐ → T

What is the value of the 9 in 39,014? ☐ → R

What is the value of the 6 in 652? ☐ → E

What is the value of the 5 in 15,722? ☐ → U

What is the value of the 3 in 7,374? ☐ → A

What is the value of the 5 in 7,054? ☐ → G

What is the value of the 3 in 63,480? ☐ → M

What is the value of the 7 in 5,474? ☐ → V

What is the value of the 5 in 7,504? ☐ → L

What is the value of the 8 in 1,981? ☐ → I

What is the value of the 2 in 7,821? ☐ → O

What is the value of the 7 in 37,239? ☐ → H

What is the value of the 8 in 8,691? ☐ → N

What is the value of the 7 in 720? ☐ → P

What is the value of the 4 in 425? ☐ → S

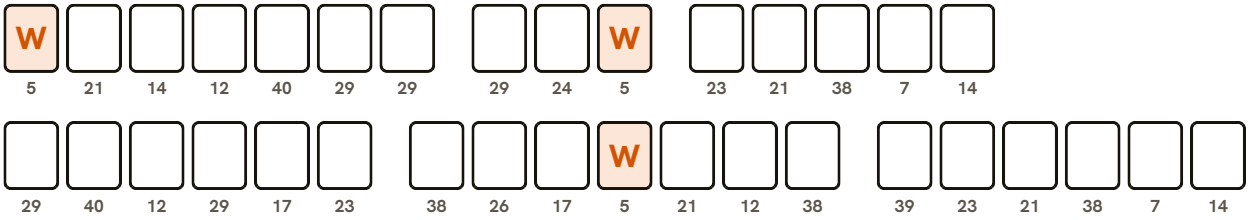
What is the value of the 1 in 4,165? ☐ → D

Scratch space:

CLUE 2 Fractions of a number

A pile of redstone dust was left behind. Solve the fraction to figure out how much power was used.

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



1/8 of 40 = ☐ → W

1/5 of 195 = ☐ → B

1/3 of 72 = ☐ → A

5/10 of 80 = ☐ → E

1/5 of 130 = ☐ → L

4/8 of 42 = ☐ → I

4/10 of 95 = ☐ → G

1/4 of 56 = ☐ → T

4/8 of 58 = ☐ → S

2/10 of 85 = ☐ → O

5/10 of 46 = ☐ → R

1/6 of 42 = ☐ → H

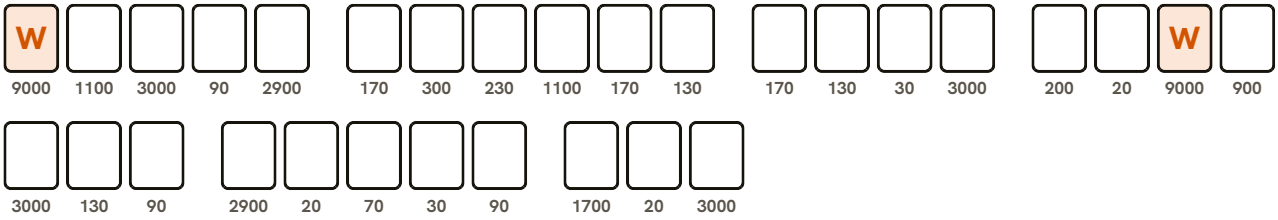
1/6 of 72 = ☐ → N

Scratch space:

CLUE 3 Rounding

The scanner radar only shows rounded power readings. Round the number to locate the target sector.

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



Round 9,351 to the nearest thousand ☐ → W

Round 2,915 to the nearest hundred ☐ → R

Round 70 to the nearest ten ☐ → G

Round 2,832 to the nearest thousand ☐ → T

Round 853 to the nearest hundred ☐ → N

Round 1,667 to the nearest hundred ☐ → B

Round 19 to the nearest ten ☐ → O

Round 133 to the nearest ten ☐ → H

Round 33 to the nearest ten ☐ → U

Round 92 to the nearest ten ☐ → E

Round 166 to the nearest ten ☐ → S

Round 220 to the nearest hundred ☐ → D

Round 287 to the nearest hundred ☐ → P

Round 1,074 to the nearest hundred ☐ → A

Round 234 to the nearest ten ☐ → L

Scratch space:

CLUE 4 Addition

You tally the scattered metal blocks left at the scene. Add them up to reveal the next piece of evidence.

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



2160 + 3138 = ☐ → F	2980 + 2744 = ☐ → O	3879 + 5488 = ☐ → E
1530 + 3252 = ☐ → A	1505 + 2596 = ☐ → N	1224 + 1020 = ☐ → C
1981 + 1304 = ☐ → S	783 + 1666 = ☐ → B	1339 + 1778 = ☐ → D
2078 + 4264 = ☐ → T	4368 + 5091 = ☐ → H	3391 + 4497 = ☐ → U

Scratch space:

CLUE 5 Fractions of a number - the last clue

The robot storage bins were partially opened. Calculate the fraction to find the last 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:

3/5 of 5 = ☐	2/8 of 4 = ☐	2/4 of 20 = ☐	4/5 of 10 = ☐	2/3 of 3 = ☐
1/3 of 36 = ☐	2/4 of 14 = ☐	1/4 of 16 = ☐	1/8 of 40 = ☐	
3/5 of 15 = ☐	3/6 of 12 = ☐			

Step 2 - cross out the sentence with each answer:

1. The villain extended a piston arm, then raised a diamond shield.
2. The villain fired a laser cannon, then sealed copper casing.
3. The villain swung a magnetic grabber, then activated a redstone core.
4. The villain swung a magnetic grabber, then sealed copper casing.
5. The villain swung a magnetic grabber, then locked emerald plating.
6. The villain fired a laser cannon, then raised a diamond shield.
7. The villain blasted a sonic screech, then locked emerald plating.
8. The villain blasted a sonic screech, then fortified an obsidian shell.
9. The villain swung a magnetic grabber, then raised a diamond shield.
10. The villain extended a piston arm, then activated a redstone core.
11. The villain fired a laser cannon, then fortified an obsidian shell.
12. The villain fired a rocket thruster, then raised a diamond shield.

TEACHER / PARENT

Answer Key

The Glitch at Block Grid Citadel

Culprit: Chip Charlie

Laser Cannon · Obsidian Shell · Right Sensor Glowing · Cube Antenna · Splash of Water

Trail: Start 21 → Clue 1 13 → Clue 2 8 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT USE EMERALD PLATING"

What is the value of the 4 in 4,606? = 4000 (T) · What is the value of the 9 in 39,014? = 9000 (R) · What is the value of the 6 in 652? = 600 (E) · What is the value of the 5 in 15,722? = 5000 (U) · What is the value of the 3 in 7,374? = 300 (A) · What is the value of the 5 in 7,054? = 50 (G) · What is the value of the 3 in 63,480? = 3000 (M) · What is the value of the 7 in 5,474? = 70 (V) · What is the value of the 5 in 7,504? = 500 (L) · What is the value of the 8 in 1,981? = 80 (I) · What is the value of the 2 in 7,821? = 20 (O) · What is the value of the 7 in 37,239? = 7000 (H) · What is the value of the 8 in 8,691? = 8000 (N) · What is the value of the 7 in 720? = 700 (P) · What is the value of the 4 in 425? = 400 (S) · What is the value of the 1 in 4,165? = 100 (D)

Clue 2 (Fractions of a number): "WITNESS SAW RIGHT SENSOR GLOWING BRIGHT"

1/8 of 40 = 5 (W) · 1/5 of 195 = 39 (B) · 1/3 of 72 = 24 (A) · 5/10 of 80 = 40 (E) · 1/5 of 130 = 26 (L) · 4/8 of 42 = 21 (I) · 4/10 of 95 = 38 (G) · 1/4 of 56 = 14 (T) · 4/8 of 58 = 29 (S) · 2/10 of 85 = 17 (O) · 5/10 of 46 = 23 (R) · 1/6 of 42 = 7 (H) · 1/6 of 72 = 12 (N)

Clue 3 (Rounding): "WATER SPLASH SHUT DOWN THE ROGUE BOT"

Round 9,351 to the nearest thousand = 9000 (W) · Round 2,915 to the nearest hundred = 2900 (R) · Round 70 to the nearest ten = 70 (G) · Round 2,832 to the nearest thousand = 3000 (T) · Round 853 to the nearest hundred = 900 (N) · Round 1,667 to the nearest hundred = 1700 (B) · Round 19 to the nearest ten = 20 (O) · Round 133 to the nearest ten = 130 (H) · Round 33 to the nearest ten = 30 (U) · Round 92 to the nearest ten = 90 (E) · Round 166 to the nearest ten = 170 (S) · Round 220 to the nearest hundred = 200 (D) · Round 287 to the nearest hundred = 300 (P) · Round 1,074 to the nearest hundred = 1100 (A) · Round 234 to the nearest ten = 230 (L)

Clue 4 (Addition): "FOUND A CUBE ANTENNA AT THE SCENE"

2160 + 3138 = 5298 (F) · 2980 + 2744 = 5724 (O) · 3879 + 5488 = 9367 (E) · 1530 + 3252 = 4782 (A) · 1505 + 2596 = 4101 (N) · 1224 + 1020 = 2244 (C) · 1981 + 1304 = 3285 (S) · 783 + 1666 = 2449 (B) · 1339 + 1778 = 3117 (D) · 2078 + 4264 = 6342 (T) · 4368 + 5091 = 9459 (H) · 3391 + 4497 = 7888 (U)

Clue 5 (Fractions of a number): surviving statement is box 11 → Chip Charlie

3/5 of 5 = 3 · 2/8 of 4 = 1 · 2/4 of 20 = 10 · 4/5 of 10 = 8 · 2/3 of 3 = 2 · 1/3 of 36 = 12 · 2/4 of 14 = 7 · 1/4 of 16 = 4 · 1/8 of 40 = 5 · 3/5 of 15 = 9 · 3/6 of 12 = 6