



# The Great Spark Core Heist

Grade 9 math · Rounding, Addition, Subtraction, Multiplication, Division · Reading level grades 7-9

Detective: \_\_\_\_\_ Date: \_\_\_\_\_

A high-security Spark Core has been stolen from the central laboratory. A rogue automaton bypassed the biometric security grid, leaving behind scorched circuits and scrambled log files. Detective, you must analyze the corrupted data to identify which robot is responsible before they drain the core's power.

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 automaton 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     | SECONDARY SUBSYSTEM | OPTICAL LASER COLOR | CHASSIS CABLING        | SYSTEM VULNERABILITY |
|-----------------|------------------|---------------------|---------------------|------------------------|----------------------|
| Unit Galileo    | Hydraulic Press  | Shield Generator    | Bright Amber Laser  | Shielded Gold Wires    | Saline Splash        |
| Unit Clarke     | Laser Welder     | Jet Thrusters       | Neon Green Laser    | Shielded Gold Wires    | Static Discharge     |
| Unit Gibson     | Hydraulic Press  | Sonar Array         | Neon Green Laser    | Insulated Silver Wires | Static Discharge     |
| Unit Kepler     | Laser Welder     | Jet Thrusters       | Neon Green Laser    | Braided Copper Wires   | Static Discharge     |
| Unit Bradbury   | Hydraulic Press  | Jet Thrusters       | Bright Amber Laser  | Braided Copper Wires   | Saline Splash        |
| Unit Dick       | Pneumatic Claw   | Thermal Camera      | Bright Amber Laser  | Braided Copper Wires   | Saline Splash        |
| Unit Copernicus | Plasma Cutter    | Shield Generator    | Neon Green Laser    | Braided Copper Wires   | Neodymium Magnet     |
| Unit Tesla      | Hydraulic Press  | Thermal Camera      | Bright Amber Laser  | Insulated Silver Wires | Static Discharge     |
| Unit Babbage    | Hydraulic Press  | Shield Generator    | Bright Amber Laser  | Shielded Gold Wires    | Static Discharge     |
| Unit Lem        | Hydraulic Press  | Thermal Camera      | Bright Amber Laser  | Braided Copper Wires   | Saline Splash        |
| Unit Newton     | Plasma Cutter    | Thermal Camera      | Neon Green Laser    | Insulated Silver Wires | Saline Splash        |
| Unit Asimov     | Pneumatic Claw   | Jet Thrusters       | Neon Green Laser    | Shielded Gold Wires    | Static Discharge     |
| Unit Pascal     | Plasma Cutter    | Thermal Camera      | Neon Green Laser    | Braided Copper Wires   | Saline Splash        |
| Unit Turing     | Magnetic Gripper | Shield Generator    | Neon Green Laser    | Braided Copper Wires   | Saline Splash        |
| Unit Curie      | Plasma Cutter    | Shield Generator    | Bright Amber Laser  | Shielded Gold Wires    | Static Discharge     |
| Unit Orwell     | Magnetic Gripper | Cloaking Field      | Neon Green Laser    | Insulated Silver Wires | Static Discharge     |
| Unit Lovelace   | Laser Welder     | Cloaking Field      | Neon Green Laser    | Shielded Gold Wires    | Static Discharge     |
| Unit Hopper     | Hydraulic Press  | Cloaking Field      | Bright Amber Laser  | Braided Copper Wires   | Saline Splash        |
| Unit Hubble     | Hydraulic Press  | Shield Generator    | Bright Amber Laser  | Braided Copper Wires   | Static Discharge     |
| Unit Shelley    | Pneumatic Claw   | Jet Thrusters       | Bright Amber Laser  | Shielded Gold Wires    | Saline Splash        |
| Unit Hawking    | Pneumatic Claw   | Sonar Array         | Bright Amber Laser  | Braided Copper Wires   | Saline Splash        |

## CLUE 1 Rounding

We found a bootleg diagnostic terminal, but its low-resolution screen rounds the current voltage to the nearest hundred.

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

|         |        |     |     |        |        |       |        |        |        |        |       |      |      |     |  |
|---------|--------|-----|-----|--------|--------|-------|--------|--------|--------|--------|-------|------|------|-----|--|
| T       |        |     |     |        |        |       |        |        |        |        |       |      |      |     |  |
| 30000   | 310000 | 700 | 310 | 140000 | 50000  | 50000 | 20     | 140000 | 4700   | 310000 | 20    | 3000 | 4700 | 470 |  |
|         |        |     |     |        |        |       |        |        |        |        |       |      |      |     |  |
| 2800000 | 50000  | 470 | 20  | 500    | 140000 | 4700  | 280000 | 50     | 140000 | 700    | 50000 | 1400 |      |     |  |

Round 29,305 to the nearest ten thousand  → **T**

Round 281,700 to the nearest ten thousand  → **G**

Round 467 to the nearest ten  → **O**

Round 2,832,203 to the nearest hundred thousand  → **C**

Round 51,354 to the nearest ten thousand  → **L**

Round 4,692 to the nearest hundred  → **N**

Round 142,732 to the nearest ten thousand  → **I**

Round 306 to the nearest ten  → **V**

Round 24 to the nearest ten  → **A**

Round 543 to the nearest hundred  → **K**

Round 307,635 to the nearest ten thousand  → **H**

Round 2,912 to the nearest thousand  → **S**

Round 693 to the nearest hundred  → **E**

Round 50 to the nearest ten  → **F**

Round 1,387 to the nearest hundred  → **D**

Scratch space:

**CLUE 2** **Addition**

Tallying the total energy spikes across the power grid lets us calculate the unit weight of the rogue bot.

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

Diagram showing the arrangement of 18 numbered boxes in two rows. The top row contains 15 boxes, and the bottom row contains 3 boxes. The boxes are numbered 1 to 18. Boxes 1, 10, and 15 are highlighted in orange and labeled 'A'.

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9  | 8  | 7  | 6  | 5  | 4  | 3  | 2  | 1  |

$$2028 + 1299 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{E}}$$

Scratch space:

## CLUE 3

## Subtraction

Subtracting the leftover oil reserves from the tank's original capacity reveals the exact fuel efficiency of the thief.

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

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| S    |      |      |      |      |      |      |      |      |      |      |      |      | S    |      |      |      |
| 4298 | 8874 | 2199 | 1302 | 5299 | 8874 | 1302 | 6475 | 5589 | 5299 | 3895 | 6409 | 6475 | 4298 | 6682 | 3517 | 1302 |

  

|      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|
|      |      |      |      |      |      |      |      |      |      | S    |
| 1302 | 8451 | 6475 | 7770 | 3895 | 5589 | 7770 | 3517 | 3895 | 1302 | 4298 |

$6417 - 2119 = \square \rightarrow \boxed{\text{S}}$

$8731 - 2322 = \square \rightarrow \boxed{\text{P}}$

$10341 - 1890 = \square \rightarrow \boxed{\text{H}}$

$2197 - 895 = \square \rightarrow \boxed{\text{T}}$

$4989 - 2790 = \square \rightarrow \boxed{\text{L}}$

$12446 - 3572 = \square \rightarrow \boxed{\text{A}}$

$11407 - 3637 = \square \rightarrow \boxed{\text{C}}$

$4244 - 727 = \square \rightarrow \boxed{\text{U}}$

$8204 - 1522 = \square \rightarrow \boxed{\text{O}}$

$8786 - 3197 = \square \rightarrow \boxed{\text{R}}$

$4477 - 582 = \square \rightarrow \boxed{\text{I}}$

$8126 - 1651 = \square \rightarrow \boxed{\text{E}}$

$9844 - 4545 = \square \rightarrow \boxed{\text{W}}$

Scratch space:

**CLUE 4**
**Multiplication facts (1-12)**

The server room is arranged in a massive grid, and multiplying the row count by the active servers pinpoints the suspect's frequency.

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

|     |     |     |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |     |  |
|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|-----|--|
| C   |     |     |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |     |  |
| 132 | 35  | 42  | 42 | 96 | 49 | 45 | 27 | 99 | 25 | 55 | 96 | 28 | 144 | 48 | 99 | 96 | 45 | 144 |  |
|     |     |     |    |    |    |    |    |    |    |    |    |    |     |    |    |    |    |     |  |
| 25  | 144 | 144 | 70 | 96 | 48 | 96 | 25 | 55 |    |    |    |    |     |    |    |    |    |     |  |

$12 \times 11 = \square \rightarrow \text{C}$

$5 \times 5 = \square \rightarrow \text{A}$

$7 \times 6 = \square \rightarrow \text{P}$

$7 \times 10 = \square \rightarrow \text{H}$

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

$3 \times 9 = \square \rightarrow \text{I}$

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

$5 \times 11 = \square \rightarrow \text{M}$

$12 \times 12 = \square \rightarrow \text{T}$

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

$4 \times 7 = \square \rightarrow \text{N}$

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

$11 \times 9 = \square \rightarrow \text{L}$

$7 \times 7 = \square \rightarrow \text{R}$

Scratch space:

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

By dividing the stolen memory drive's sectors equally among our decryption nodes, we isolate the final security code.

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:**

$60 \div 6 = \boxed{\phantom{00}}$

$144 \div 12 = \boxed{\phantom{00}}$

$30 \div 6 = \boxed{\phantom{00}}$

$7 \div 1 = \boxed{\phantom{00}}$

$99 \div 11 = \boxed{\phantom{00}}$

$33 \div 3 = \boxed{\phantom{00}}$

$4 \div 1 = \boxed{\phantom{00}}$

$80 \div 10 = \boxed{\phantom{00}}$

$20 \div 10 = \boxed{\phantom{00}}$

$66 \div 11 = \boxed{\phantom{00}}$

$5 \div 5 = \boxed{\phantom{00}}$

**Step 2 - cross out the sentence with each answer:**

1. The villain sliced open the vault door with a laser welder, then blasted through the roof vents with jet thrusters.
2. The villain melted the lock using a plasma cutter, then pinged the getaway route using a sonar array.
3. The villain ripped the console apart with a pneumatic claw, then pinged the getaway route using a sonar array.
4. The villain wrenched the safe free using a magnetic gripper, then faded into the shadows using a cloaking field.
5. The villain crushed the steel gate with a hydraulic press, then located the guard patrols with a thermal camera.
6. The villain crushed the steel gate with a hydraulic press, then blocked incoming security bolts with a shield generator.
7. The villain ripped the console apart with a pneumatic claw, then blocked incoming security bolts with a shield generator.
8. The villain sliced open the vault door with a laser welder, then located the guard patrols with a thermal camera.
9. The villain sliced open the vault door with a laser welder, then faded into the shadows using a cloaking field.
10. The villain crushed the steel gate with a hydraulic press, then blasted through the roof vents with jet thrusters.
11. The villain crushed the steel gate with a hydraulic press, then pinged the getaway route using a sonar array.
12. The villain ripped the console apart with a pneumatic claw, then located the guard patrols with a thermal camera.

# Answer Key

## The Great Spark Core Heist

### Culprit: Unit Hawking

Pneumatic Claw · Sonar Array · Bright Amber Laser · Braided Copper Wires · Saline Splash

Trail: Start 21 → Clue 1 18 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

#### Clue 1 (Rounding): "THE VILLAIN HAS NO CLOAKING FIELD"

Round 29,305 to the nearest ten thousand = 30000 (T) · Round 281,700 to the nearest ten thousand = 280000 (G) · Round 467 to the nearest ten = 470 (O) · Round 2,832,203 to the nearest hundred thousand = 2800000 (C) · Round 51,354 to the nearest ten thousand = 50000 (L) · Round 4,692 to the nearest hundred = 4700 (N) · Round 142,732 to the nearest ten thousand = 140000 (I) · Round 306 to the nearest ten = 310 (V) · Round 24 to the nearest ten = 20 (A) · Round 543 to the nearest hundred = 500 (K) · Round 307,635 to the nearest ten thousand = 310000 (H) · Round 2,912 to the nearest thousand = 3000 (S) · Round 693 to the nearest hundred = 700 (E) · Round 50 to the nearest ten = 50 (F) · Round 1,387 to the nearest hundred = 1400 (D)

#### Clue 2 (Addition): "AMBER LIGHT BEAMED AT THE CAMERA"

$3005 + 2180 = 5185$  (A) ·  $3327 + 3132 = 6459$  (T) ·  $3279 + 1703 = 4982$  (D) ·  $3099 + 4922 = 8021$  (R) ·  $2195 + 2547 = 4742$  (H) ·  $1837 + 1631 = 3468$  (C) ·  $2635 + 1248 = 3883$  (B) ·  $4327 + 4440 = 8767$  (L) ·  $2010 + 2834 = 4844$  (M) ·  $832 + 1436 = 2268$  (G) ·  $3565 + 5029 = 8594$  (I) ·  $2028 + 1299 = 3327$  (E)

#### Clue 3 (Subtraction): "SALT WATER WIPES OUT THE CIRCUITS"

$6417 - 2119 = 4298$  (S) ·  $8731 - 2322 = 6409$  (P) ·  $10341 - 1890 = 8451$  (H) ·  $2197 - 895 = 1302$  (T) ·  $4989 - 2790 = 2199$  (L) ·  $12446 - 3572 = 8874$  (A) ·  $11407 - 3637 = 7770$  (C) ·  $4244 - 727 = 3517$  (U) ·  $8204 - 1522 = 6682$  (O) ·  $8786 - 3197 = 5589$  (R) ·  $4477 - 582 = 3895$  (I) ·  $8126 - 1651 = 6475$  (E) ·  $9844 - 4545 = 5299$  (W)

#### Clue 4 (Multiplication facts (1-12)): "COPPER FILAMENTS LEFT AT THE SEAM"

$12 \times 11 = 132$  (C) ·  $5 \times 5 = 25$  (A) ·  $7 \times 6 = 42$  (P) ·  $7 \times 10 = 70$  (H) ·  $7 \times 5 = 35$  (O) ·  $3 \times 9 = 27$  (I) ·  $5 \times 9 = 45$  (F) ·  $5 \times 11 = 55$  (M) ·  $12 \times 12 = 144$  (T) ·  $6 \times 8 = 48$  (S) ·  $4 \times 7 = 28$  (N) ·  $12 \times 8 = 96$  (E) ·  $11 \times 9 = 99$  (L) ·  $7 \times 7 = 49$  (R)

#### Clue 5 (Division facts (1-12)): surviving statement is box 3 → Unit Hawking

$60 \div 6 = 10$  ·  $144 \div 12 = 12$  ·  $30 \div 6 = 5$  ·  $7 \div 1 = 7$  ·  $99 \div 11 = 9$  ·  $33 \div 3 = 11$  ·  $4 \div 1 = 4$  ·  $80 \div 10 = 8$  ·  $20 \div 10 = 2$  ·  $66 \div 11 = 6$  ·  $5 \div 5 = 1$