



# The Kyoto Toy Castle Mystery

Grade 6 math · Place value, Addition, Subtraction, Percentages, Division · Reading level grades 1-2

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

Oh no! Someone took the precious Golden Bonsai Tree from the Toy Master's shelf. Witnesses saw a speedy ninja run into the neon cherry gardens. Let us look for clues and find the thief!

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 Glitch Ninja is** \_\_\_\_\_

## Possible suspects

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

| NAME   | DOJO SKILL     | TECH GEAR    | SWORD GRIP                | MASK COLOR      | DISTRACTION |
|--------|----------------|--------------|---------------------------|-----------------|-------------|
| Akira  | origami shield | mech arms    | holds sword in left hand  | blue ninja mask | toy drums   |
| Daiki  | cherry mist    | neon glow    | holds sword in left hand  | red ninja mask  | sweet mochi |
| Mei    | robo punch     | neon glow    | holds sword in right hand | gold ninja mask | sweet mochi |
| Chiyo  | giant fan      | mech arms    | holds sword in left hand  | red ninja mask  | green tea   |
| Sora   | robo punch     | neon glow    | holds sword in left hand  | gold ninja mask | sweet mochi |
| Yumi   | cherry mist    | cyber jet    | holds sword in right hand | gold ninja mask | green tea   |
| Aoi    | neon speed     | neon glow    | holds sword in right hand | red ninja mask  | green tea   |
| Kenji  | giant fan      | bonsai blast | holds sword in right hand | gold ninja mask | toy drums   |
| Yuto   | neon speed     | mech arms    | holds sword in left hand  | gold ninja mask | sweet mochi |
| Yuki   | giant fan      | mech arms    | holds sword in left hand  | red ninja mask  | sweet mochi |
| Momo   | cherry mist    | mech arms    | holds sword in left hand  | gold ninja mask | green tea   |
| Kaito  | cherry mist    | bonsai blast | holds sword in left hand  | gold ninja mask | sweet mochi |
| Rin    | cherry mist    | cyber jet    | holds sword in left hand  | blue ninja mask | sweet mochi |
| Hana   | robo punch     | bamboo jump  | holds sword in left hand  | gold ninja mask | toy drums   |
| Taku   | neon speed     | bonsai blast | holds sword in left hand  | gold ninja mask | sweet mochi |
| Keiko  | neon speed     | cyber jet    | holds sword in left hand  | gold ninja mask | sweet mochi |
| Sakura | giant fan      | cyber jet    | holds sword in right hand | red ninja mask  | sweet mochi |
| Naoko  | neon speed     | bamboo jump  | holds sword in left hand  | gold ninja mask | sweet mochi |
| Haru   | cherry mist    | bonsai blast | holds sword in left hand  | red ninja mask  | sweet mochi |
| Kenzo  | giant fan      | bamboo jump  | holds sword in left hand  | red ninja mask  | green tea   |
| Shin   | cherry mist    | bonsai blast | holds sword in left hand  | blue ninja mask | sweet mochi |

### CLUE 1

A glowing digital screen has secret codes. We must look at the correct place value digit to read the first clue.

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

20 30 5000 50 700 5000 600 300 100 700 80 700 900 600 200 600 700 700 800 20

60 50 5000 2000 800 700 50 600 80 2000 7000 600 50 20

What is the value of the 2 in 986,724?  → **T**

What is the value of the 5 in 10,359?  → **S**

What is the value of the 2 in 94,256?  → **C**

What is the value of the 6 in 597,634?  → **A**

What is the value of the 8 in 16,385?  →

What is the value of the 9 in 606,962?  → **J**

What is the value of the 7 in 665,746?  → **N**

What is the value of the 7 in 867,413?  → **L**

What is the value of the 8 in 10,821?  →

What is the value of the 3 in 26,530?  → **H**

What is the value of the 6 in 859,168?  → **U**

What is the value of the 1 in 862,192?  → **Y**

What is the value of the 2 in 92,435?  → **B**

What is the value of the 3 in 819,359?  → **K**

What is the value of the 5 in 15,920?  → **E**

Scratch space:

**CLUE 2**
**Addition**

We need to count the tiny toy sushi plates. Adding them together unlocks the path to the next clue.

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

|              |             |             |             |             |             |             |             |             |             |             |             |             |             |             |              |             |             |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|
| <div>T</div> | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> | <div></div> | <div>T</div> | <div></div> | <div></div> |
| 3088         | 6790        | 7968        | 8410        | 5931        | 6457        | 9024        | 8896        | 5931        | 3492        | 8410        | 6754        | 6899        | 3088        | 6790        | 7968         |             |             |

|             |             |             |              |             |             |             |             |
|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|
| <div></div> | <div></div> | <div></div> | <div>T</div> | <div></div> | <div></div> | <div></div> | <div></div> |
| 5757        | 7968        | 4815        | 3088         | 6790        | 3492        | 6899        | 8896        |

$1316 + 1772 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{T}}$

$3929 + 2528 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{O}}$

$3277 + 3513 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{H}}$

$4602 + 4422 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{R}}$

$2820 + 3934 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{I}}$

$5254 + 2714 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{E}}$

$1980 + 2835 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{F}}$

$1326 + 2166 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{A}}$

$6099 + 2797 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{D}}$

$3396 + 2361 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{L}}$

$3206 + 2725 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{W}}$

$2516 + 4383 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{N}}$

$4785 + 3625 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{S}}$

Scratch space:

## CLUE 3

## Subtraction

Some paper lanterns in the garden went dark. Subtracting the dark ones from the total reveals a hidden clue.

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

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| T    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
| 7467 | 4645 | 2946 | 4807 | 7556 | 8170 | 3703 | 8170 | 7779 | 8170 | 4807 | 1121 | 7556 | 8997 | 4873 |  |

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
|      |      |      |      | T    |      |      |      |      |      |
| 4207 | 7779 | 2946 | 2946 | 7467 | 4873 | 8997 | 7118 | 4645 | 1148 |

$11302 - 3835 = \square \rightarrow \boxed{\text{T}}$

$3543 - 2395 = \square \rightarrow \boxed{\text{I}}$

$10394 - 3276 = \square \rightarrow \boxed{\text{C}}$

$12615 - 4836 = \square \rightarrow \boxed{\text{W}}$

$8994 - 4121 = \square \rightarrow \boxed{\text{M}}$

$8234 - 678 = \square \rightarrow \boxed{\text{R}}$

$10506 - 1509 = \square \rightarrow \boxed{\text{O}}$

$5137 - 2191 = \square \rightarrow \boxed{\text{E}}$

$5572 - 927 = \square \rightarrow \boxed{\text{H}}$

$5038 - 3917 = \square \rightarrow \boxed{\text{F}}$

$5437 - 1734 = \square \rightarrow \boxed{\text{N}}$

$7260 - 2453 = \square \rightarrow \boxed{\text{Y}}$

$4615 - 408 = \square \rightarrow \boxed{\text{S}}$

$12133 - 3963 = \square \rightarrow \boxed{\text{A}}$

Scratch space:

## CLUE 4 Percentages

The robo-dojo power meter is running low. Finding the correct percentage opens a safe with a fresh clue.

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

|          |    |    |    |    |    |    |    |   |          |    |          |    |    |    |    |    |    |          |
|----------|----|----|----|----|----|----|----|---|----------|----|----------|----|----|----|----|----|----|----------|
| <b>A</b> |    |    |    |    |    |    |    |   | <b>A</b> |    | <b>A</b> |    |    |    |    |    |    | <b>A</b> |
| 18       | 44 | 28 | 27 | 4  | 30 | 37 | 30 | 2 | 18       | 45 | 18       | 43 | 42 | 27 | 25 | 38 | 17 | 18       |
|          |    |    |    |    |    |    |    |   |          |    |          |    |    |    |    |    |    |          |
| 43       | 14 | 37 | 30 | 25 |    |    |    |   |          |    |          |    |    |    |    |    |    |          |

|                                              |                                              |                                              |
|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| 75% of 24 = <input type="text"/> → <b>A</b>  | 50% of 8 = <input type="text"/> → <b>D</b>   | 50% of 56 = <input type="text"/> → <b>O</b>  |
| 50% of 84 = <input type="text"/> → <b>K</b>  | 20% of 225 = <input type="text"/> → <b>M</b> | 20% of 125 = <input type="text"/> → <b>E</b> |
| 20% of 215 = <input type="text"/> → <b>S</b> | 60% of 50 = <input type="text"/> → <b>N</b>  | 40% of 110 = <input type="text"/> → <b>G</b> |
| 20% of 85 = <input type="text"/> → <b>T</b>  | 5% of 40 = <input type="text"/> → <b>J</b>   | 40% of 35 = <input type="text"/> → <b>H</b>  |
| 60% of 45 = <input type="text"/> → <b>L</b>  | 20% of 190 = <input type="text"/> → <b>F</b> | 50% of 74 = <input type="text"/> → <b>I</b>  |

Scratch space:

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

We have to divide these colorful origami cranes equally among our team. Sharing them fairly gives us our 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:**

$72 \div 8 = \boxed{\phantom{00}}$

$120 \div 12 = \boxed{\phantom{00}}$

$48 \div 12 = \boxed{\phantom{00}}$

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

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

$16 \div 8 = \boxed{\phantom{00}}$

$54 \div 9 = \boxed{\phantom{00}}$

$2 \div 2 = \boxed{\phantom{00}}$

$49 \div 7 = \boxed{\phantom{00}}$

$55 \div 5 = \boxed{\phantom{00}}$

$27 \div 9 = \boxed{\phantom{00}}$

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

1. The villain stretches a big robot hand, then uses giant metal arms to climb.
2. The villain throws giant paper stars, then jumps over the tall bamboo.
3. The villain makes a cloud of cherry petals, then lights up with a bright neon glow.
4. The villain zooms past the neon lights, then flies away on a cyber jet.
5. The villain unfolds a huge paper shield, then flies away on a cyber jet.
6. The villain zooms past the neon lights, then shoots a bright bonsai blast.
7. The villain zooms past the neon lights, then lights up with a bright neon glow.
8. The villain stretches a big robot hand, then shoots a bright bonsai blast.
9. The villain zooms past the neon lights, then uses giant metal arms to climb.
10. The villain stretches a big robot hand, then lights up with a bright neon glow.
11. The villain stretches a big robot hand, then flies away on a cyber jet.
12. The villain zooms past the neon lights, then jumps over the tall bamboo.

# Answer Key

## The Kyoto Toy Castle Mystery

### Culprit: Naoko

neon speed · bamboo jump · holds sword in left hand · gold ninja mask · sweet mochi

Trail: Start 21 → Clue 1 16 → Clue 2 12 → Clue 3 7 → Clue 4 4 → Clue 5 1

### Clue 1 (Place value): "THE SNEAKY NINJA CANNOT USE BONSAI BLAST"

What is the value of the 2 in 986,724? = 20 (T) · What is the value of the 5 in 10,359? = 50 (S) · What is the value of the 2 in 94,256? = 200 (C) · What is the value of the 6 in 597,634? = 600 (A) · What is the value of the 8 in 16,385? = 80 (I) · What is the value of the 9 in 606,962? = 900 (J) · What is the value of the 7 in 665,746? = 700 (N) · What is the value of the 7 in 867,413? = 7000 (L) · What is the value of the 8 in 10,821? = 800 (O) · What is the value of the 3 in 26,530? = 30 (H) · What is the value of the 6 in 859,168? = 60 (U) · What is the value of the 1 in 862,192? = 100 (Y) · What is the value of the 2 in 92,435? = 2000 (B) · What is the value of the 3 in 819,359? = 300 (K) · What is the value of the 5 in 15,920? = 5000 (E)

### Clue 2 (Addition): "THE SWORD WAS IN THE LEFT HAND"

1316 + 1772 = 3088 (T) · 3929 + 2528 = 6457 (O) · 3277 + 3513 = 6790 (H) · 4602 + 4422 = 9024 (R) · 2820 + 3934 = 6754 (I) · 5254 + 2714 = 7968 (E) · 1980 + 2835 = 4815 (F) · 1326 + 2166 = 3492 (A) · 6099 + 2797 = 8896 (D) · 3396 + 2361 = 5757 (L) · 3206 + 2725 = 5931 (W) · 2516 + 4383 = 6899 (N) · 4785 + 3625 = 8410 (S)

### Clue 3 (Subtraction): "THEY RAN AWAY FROM SWEET MOCHI"

11302 - 3835 = 7467 (T) · 3543 - 2395 = 1148 (I) · 10394 - 3276 = 7118 (C) · 12615 - 4836 = 7779 (W) · 8994 - 4121 = 4873 (M) · 8234 - 678 = 7556 (R) · 10506 - 1509 = 8997 (O) · 5137 - 2191 = 2946 (E) · 5572 - 927 = 4645 (H) · 5038 - 3917 = 1121 (F) · 5437 - 1734 = 3703 (N) · 7260 - 2453 = 4807 (Y) · 4615 - 408 = 4207 (S) · 12133 - 3963 = 8170 (A)

### Clue 4 (Percentages): "A GOLD NINJA MASK LEFT A SHINE"

75% of 24 = 18 (A) · 50% of 8 = 4 (D) · 50% of 56 = 28 (O) · 50% of 84 = 42 (K) · 20% of 225 = 45 (M) · 20% of 125 = 25 (E) · 20% of 215 = 43 (S) · 60% of 50 = 30 (N) · 40% of 110 = 44 (G) · 20% of 85 = 17 (T) · 5% of 40 = 2 (J) · 40% of 35 = 14 (H) · 60% of 45 = 27 (L) · 20% of 190 = 38 (F) · 50% of 74 = 37 (I)

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

72 ÷ 8 = 9 · 120 ÷ 12 = 10 · 48 ÷ 12 = 4 · 80 ÷ 10 = 8 · 30 ÷ 6 = 5 · 16 ÷ 8 = 2 · 54 ÷ 9 = 6 · 2 ÷ 2 = 1 · 49 ÷ 7 = 7 · 55 ÷ 5 = 11 · 27 ÷ 9 = 3