



The Golden Cartridge Glitch

Grade 5 math · Place value, Rounding, Fractions of a number, Multi-step word problems · Reading level grades 3-4

Detective: _____ Date: _____

Someone hacked the Pixel Kingdom master server! They stole the legendary Golden Cartridge and scrambled the game files. The digital detective needs your help to scan the avatars, spot the clues, and catch the glitchy 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 King is _____

Possible suspects

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

NAME	SPECIAL MOVE	EQUIPPED GEAR	CONTROLLER GRIP	AVATAR HAIR	GAME HAZARD WEAKNESS
Ash Ketchum	Stealth Cloak	Gravity Belt	Left-Handed Grip	Neon Blue Hair	Lag Spike
Captain Toad	Freeze Ray	Gravity Belt	Left-Handed Grip	Bright Pink Hair	Water Hazard
Sonic	Double Jump	Shield Potion	Left-Handed Grip	Bright Pink Hair	Lag Spike
Knuckles	Fireball Toss	Laser Sword	Right-Handed Grip	Neon Blue Hair	Lag Spike
Princess Peach	Stealth Cloak	Shield Potion	Right-Handed Grip	Neon Blue Hair	Lag Spike
Pac Man	Stealth Cloak	Speed Boots	Right-Handed Grip	Bright Pink Hair	Lag Spike
Master Chief	Fireball Toss	Laser Sword	Left-Handed Grip	Neon Blue Hair	Lag Spike
Megaman	Double Jump	Mega Hammer	Right-Handed Grip	Neon Blue Hair	Lag Spike
Yoshi	Stealth Cloak	Mega Hammer	Left-Handed Grip	Neon Blue Hair	Lava Pit
Fox McCloud	Spin Attack	Shield Potion	Left-Handed Grip	Spiky Green Hair	Water Hazard
Link	Freeze Ray	Mega Hammer	Right-Handed Grip	Spiky Green Hair	Water Hazard
Luigi	Double Jump	Mega Hammer	Right-Handed Grip	Spiky Green Hair	Lava Pit
Alex	Spin Attack	Speed Boots	Left-Handed Grip	Bright Pink Hair	Lava Pit
Steve	Spin Attack	Speed Boots	Right-Handed Grip	Neon Blue Hair	Lag Spike
Princess Daisy	Fireball Toss	Speed Boots	Left-Handed Grip	Bright Pink Hair	Lag Spike
Toadette	Double Jump	Speed Boots	Right-Handed Grip	Neon Blue Hair	Lag Spike
Zelda	Spin Attack	Gravity Belt	Right-Handed Grip	Neon Blue Hair	Lava Pit
Tails	Freeze Ray	Mega Hammer	Left-Handed Grip	Bright Pink Hair	Lava Pit
Mario	Freeze Ray	Speed Boots	Right-Handed Grip	Bright Pink Hair	Water Hazard
Donkey Kong	Stealth Cloak	Mega Hammer	Right-Handed Grip	Spiky Green Hair	Lava Pit
Samus	Double Jump	Shield Potion	Left-Handed Grip	Spiky Green Hair	Lava Pit

CLUE 1 Place value

Your handheld console scans the digital dust. It decodes the digit in the tens place of the secure server code to unlock the first secret file.

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

T							T												T
800	9000	4000		80	5000	60	800	400	9000	4000	20		3000	6000	4000	8000	900	6000	800
400	500	20	20	30	500	90	4000	80	500	9000	500	90	90	4000	20				

What is the value of the 8 in 530,839? → **T**

What is the value of the 8 in 34,686? → **G**

What is the value of the 5 in 483,547? → **A**

What is the value of the 8 in 278,934? → **S**

What is the value of the 4 in 705,401? → **C**

What is the value of the 9 in 37,492? → **M**

What is the value of the 6 in 876,505? → **O**

What is the value of the 2 in 384,420? → **R**

What is the value of the 4 in 974,778? → **E**

What is the value of the 9 in 85,905? → **N**

What is the value of the 9 in 79,415? → **H**

What is the value of the 6 in 319,567? → **I**

What is the value of the 5 in 325,813? → **L**

What is the value of the 3 in 153,074? → **D**

What is the value of the 3 in 747,432? → **Y**

Scratch space:

CLUE 2

The radar screen is too fuzzy to show exact player levels. It only displays the numbers rounded to the nearest ten to trace the runner.

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

The diagram illustrates a sequence of numbers arranged in two rows. The top row contains 18 boxes, and the bottom row contains 14 boxes. Some boxes are shaded orange and contain the letter 'T', indicating they are 'true' or 'active'. The numbers below the boxes represent the values of the elements in the sequence.

Top Row:

- Box 1: Orange, T (700)
- Box 2: (3000)
- Box 3: (110)
- Box 4: (9000)
- Box 5: (3700)
- Box 6: (300)
- Box 7: Orange, T (700)
- Box 8: (20)
- Box 9: (3700)
- Box 10: (900)
- Box 11: (900)
- Box 12: (110)
- Box 13: (20)
- Box 14: (370)
- Box 15: (20)
- Box 16: (30)
- Box 17: (430)
- Box 18: (5000)
- Box 19: (50)
- Box 20: (4300)

Bottom Row:

- Box 1: (3700)
- Box 2: (300)
- Box 3: (900)
- Box 4: (1700)
- Box 5: (3700)
- Box 6: (300)
- Box 7: Orange, T (700)
- Box 8: (3000)
- Box 9: (110)
- Box 10: (20)
- Box 11: (30)
- Box 12: (370)
- Box 13: (3000)
- Box 14: Orange, T (700)

Round 719 to the nearest hundred $\rightarrow$ **T**

Round 54 to the nearest ten $\rightarrow$ **A**

Round 3,708 to the nearest hundred $\rightarrow$

Round 4,306 to the nearest hundred $\rightarrow$ **S**

Round 887 to the nearest hundred → **L**

Round 3,214 to the nearest thousand → **H**

Round 368 to the nearest ten $\rightarrow$ **G**

Round 5,106 to the nearest thousand → **W**

Round 434 to the nearest ten $\rightarrow$ **P**

Round 9,480 to the nearest thousand → **C**

Round 21 to the nearest ten $\rightarrow$ **R**

Round 1,682 to the nearest hundred $\rightarrow$ **Y**

Round 108 to the nearest ten → **E**

Round 30 to the nearest ten $\rightarrow$

Round 275 to the nearest hundred → **N**

Scratch space:

CLUE 3
Fractions of a number

To unlock the main server cabinet, you must count exactly a fraction of the power crystals sitting on the lobby shelf.

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

A								A							
27	22	12	19	19	31	14	6	27	26	22	35	32	5	31	
										A					
22	4	3	35	35	31	19	4	21	31	25	27	19	26	12	33

$2/6 \text{ of } 81 = \square \rightarrow \text{A}$

$2/4 \text{ of } 38 = \square \rightarrow \text{D}$

$2/10 \text{ of } 175 = \square \rightarrow \text{P}$

$6/8 \text{ of } 4 = \square \rightarrow \text{O}$

$2/4 \text{ of } 8 = \square \rightarrow \text{T}$

$2/4 \text{ of } 66 = \square \rightarrow \text{Y}$

$5/10 \text{ of } 52 = \square \rightarrow \text{G}$

$1/2 \text{ of } 28 = \square \rightarrow \text{N}$

$2/5 \text{ of } 15 = \square \rightarrow \text{L}$

$2/10 \text{ of } 125 = \square \rightarrow \text{B}$

$1/5 \text{ of } 60 = \square \rightarrow \text{U}$

$2/8 \text{ of } 124 = \square \rightarrow \text{E}$

$4/6 \text{ of } 33 = \square \rightarrow \text{S}$

$1/4 \text{ of } 20 = \square \rightarrow \text{K}$

$1/4 \text{ of } 84 = \square \rightarrow \text{H}$

$2/4 \text{ of } 64 = \square \rightarrow \text{I}$

Scratch space:

CLUE 4

Multi-step word problems

A locked treasure chest requires you to track the exact score points earned across three different game levels to pop its lock.

Solve each problem, then write its letter in the boxes to fill in the missing word.

A strand of

N			N						A	I	R
42	36	46	42	70	61	17	36	32			

 hair turned up at the scene.

There were 329 game cartridges in all. 35 game cartridges were set aside. The rest were shared equally among 7 Team Arcade. How many game cartridges did each get?

Answer: → **N**

Pixel Pete earned 5 power stars in each of 3 rounds, plus 59 bonus power stars. Then 4 power stars were lost. How many power stars are left?

Answer: → **B**

There were 139 gold coins in all. 3 gold coins were set aside. The rest were shared equally among 8 Team Arcade. How many gold coins did each get?

Answer: → **U**

Pixel Pete earned 7 mystery boxes in each of 4 rounds, plus 40 bonus mystery boxes. Then 7 mystery boxes were lost. How many mystery boxes are left?

Answer: → **L**

There were 301 power stars in all. 1 Team Arcade used 25 power stars each. The other 6 Team Arcade shared the rest equally. How many power stars did each of the other Team Arcade get?

Answer: → **O**

Pixel Pete filled 4 boxes with 6 health potions each, then found 8 more health potions. How many health potions are there in all?

Answer: → **H**

There were 176 mystery boxes in all. 4 Team Arcade used 17 mystery boxes each. The other 3 Team Arcade shared the rest equally. How many mystery boxes did each of the other Team Arcade get?

Answer: → **E**

Scratch space:

CLUE 5**Fractions of a number - the last clue**

The mystery reward box will open only if you divide the total health potions into equal groups and take a fraction of them.

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:

$4/6 \text{ of } 3 = \boxed{}$

$2/4 \text{ of } 12 = \boxed{}$

$2/8 \text{ of } 36 = \boxed{}$

$7/8 \text{ of } 8 = \boxed{}$

$4/8 \text{ of } 2 = \boxed{}$

$3/4 \text{ of } 4 = \boxed{}$

$1/2 \text{ of } 16 = \boxed{}$

$5/8 \text{ of } 8 = \boxed{}$

$5/10 \text{ of } 22 = \boxed{}$

$1/4 \text{ of } 16 = \boxed{}$

$2/4 \text{ of } 24 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain double-jumped over the castle wall, then floated up high with a gravity belt.
2. The villain hurled a massive fireball at the gate, then carved a path using a bright laser sword.
3. The villain hurled a massive fireball at the gate, then floated up high with a gravity belt.
4. The villain blasted the drawbridge with a freeze ray, then smashed the high score board with a mega hammer.
5. The villain blasted the drawbridge with a freeze ray, then chugged a glowing shield potion.
6. The villain slashed through the barricade with a spin attack, then dashed away wearing speed boots.
7. The villain double-jumped over the castle wall, then carved a path using a bright laser sword.
8. The villain faded away using a stealth cloak, then floated up high with a gravity belt.
9. The villain double-jumped over the castle wall, then dashed away wearing speed boots.
10. The villain faded away using a stealth cloak, then chugged a glowing shield potion.
11. The villain blasted the drawbridge with a freeze ray, then floated up high with a gravity belt.
12. The villain slashed through the barricade with a spin attack, then floated up high with a gravity belt.

Answer Key

The Golden Cartridge Glitch

Culprit: Princess Peach

Stealth Cloak · Shield Potion · Right-Handed Grip · Neon Blue Hair · Lag Spike

Trail: Start 21 → Clue 1 15 → Clue 2 7 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE GLITCHER DOES NOT CARRY A MEGA HAMMER"

What is the value of the 8 in 530,839? = 800 (T) · What is the value of the 8 in 34,686? = 80 (G) · What is the value of the 5 in 483,547? = 500 (A) · What is the value of the 8 in 278,934? = 8000 (S) · What is the value of the 4 in 705,401? = 400 (C) · What is the value of the 9 in 37,492? = 90 (M) · What is the value of the 6 in 876,505? = 6000 (O) · What is the value of the 2 in 384,420? = 20 (R) · What is the value of the 4 in 974,778? = 4000 (E) · What is the value of the 9 in 85,905? = 900 (N) · What is the value of the 9 in 79,415? = 9000 (H) · What is the value of the 6 in 319,567? = 60 (I) · What is the value of the 5 in 325,813? = 5000 (L) · What is the value of the 3 in 153,074? = 3000 (D) · What is the value of the 3 in 747,432? = 30 (Y)

Clue 2 (Rounding): "THE CONTROLLER GRIP WAS ONLY ON THE RIGHT"

Round 719 to the nearest hundred = 700 (T) · Round 54 to the nearest ten = 50 (A) · Round 3,708 to the nearest hundred = 3700 (O) · Round 4,306 to the nearest hundred = 4300 (S) · Round 887 to the nearest hundred = 900 (L) · Round 3,214 to the nearest thousand = 3000 (H) · Round 368 to the nearest ten = 370 (G) · Round 5,106 to the nearest thousand = 5000 (W) · Round 434 to the nearest ten = 430 (P) · Round 9,480 to the nearest thousand = 9000 (C) · Round 21 to the nearest ten = 20 (R) · Round 1,682 to the nearest hundred = 1700 (Y) · Round 108 to the nearest ten = 110 (E) · Round 30 to the nearest ten = 30 (I) · Round 275 to the nearest hundred = 300 (N)

Clue 3 (Fractions of a number): "A SUDDEN LAG SPIKE STOPPED THE BAD GUY"

$\frac{2}{6}$ of 81 = 27 (A) · $\frac{2}{4}$ of 38 = 19 (D) · $\frac{2}{10}$ of 175 = 35 (P) · $\frac{6}{8}$ of 4 = 3 (O) · $\frac{2}{4}$ of 8 = 4 (T) · $\frac{2}{4}$ of 66 = 33 (Y) · $\frac{5}{10}$ of 52 = 26 (G) · $\frac{1}{2}$ of 28 = 14 (N) · $\frac{2}{5}$ of 15 = 6 (L) · $\frac{2}{10}$ of 125 = 25 (B) · $\frac{1}{5}$ of 60 = 12 (U) · $\frac{2}{8}$ of 124 = 31 (E) · $\frac{4}{6}$ of 33 = 22 (S) · $\frac{1}{4}$ of 20 = 5 (K) · $\frac{1}{4}$ of 84 = 21 (H) · $\frac{2}{4}$ of 64 = 32 (I)

Clue 4 (Multi-step word problems): "NEON BLUE HAIR"

There were 329 game cartridges in all. 35 game cartridges were set aside. The rest were shared equally among 7 Team Arcade. How many game cartridges did each get? = 42 (N) · Pixel Pete earned 5 power stars in each of 3 rounds, plus 59 bonus power stars. Then 4 power stars were lost. How many power stars are left? = 70 (B) · There were 139 gold coins in all. 3 gold coins were set aside. The rest were shared equally among 8 Team Arcade. How many gold coins did each get? = 17 (U) · Pixel Pete earned 7 mystery boxes in each of 4 rounds, plus 40 bonus mystery boxes. Then 7 mystery boxes were lost. How many mystery boxes are left? = 61 (L) · There were 301 power stars in all. 1 Team Arcade used 25 power stars each. The other 6 Team Arcade shared the rest equally. How many power stars did each of the other Team Arcade get? = 46 (O) · Pixel Pete filled 4 boxes with 6 health potions each, then found 8 more health potions. How many health potions are there in all? = 32 (H) · There were 176 mystery boxes in all. 4 Team Arcade used 17 mystery boxes each. The other 3 Team Arcade shared the rest equally. How many mystery boxes did each of the other Team Arcade get? = 36 (E)

Clue 5 (Fractions of a number): surviving statement is box 10 → Princess Peach

$\frac{4}{6}$ of 3 = 2 · $\frac{2}{4}$ of 12 = 6 · $\frac{2}{8}$ of 36 = 9 · $\frac{7}{8}$ of 8 = 7 · $\frac{4}{8}$ of 2 = 1 · $\frac{3}{4}$ of 4 = 3 · $\frac{1}{2}$ of 16 = 8 · $\frac{5}{8}$ of 8 = 5 · $\frac{5}{10}$ of 22 = 11 · $\frac{1}{4}$ of 16 = 4 · $\frac{2}{4}$ of 24 = 12