The Great Pipe Kingdom Mystery

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

Detective: _____ **Date:** _____

Someone snuck into the Mushroom Castle Vaults and swapped the Golden Star for a painted rock! The Grand Keeper of Coins needs your math skills to inspect the scene, decode clues, and identify the Pipe Bandit.

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 Pipe Bandit is _____

Possible suspects

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

NAME	MAIN POWER	EXTRA POWER	OBSERVED TELL	HAIR TYPE	WEAKNESS
Mayor Mushroom	Ice Flower	Propeller Box	Right Handed	Smooth Hair	Koopa Shell
Builder Ben	Ice Flower	Dash Boots	Right Handed	Spiky Hair	Banana Peel
Professor Pumper	Super Mushroom	Cloud Flower	Left Handed	Spiky Hair	Koopa Shell
Builder Bobbie	Super Mushroom	Mini Mushroom	Right Handed	Curly Hair	Koopa Shell
Baron Bowser	Super Mushroom	Mini Mushroom	Right Handed	Spiky Hair	Koopa Shell
Scout Topper	Ice Flower	Cloud Flower	Left Handed	Smooth Hair	Koopa Shell
Racer Rex	Penguin Suit	Propeller Box	Right Handed	Spiky Hair	Koopa Shell
Princess Penny	Ice Flower	Mini Mushroom	Right Handed	Spiky Hair	Koopa Shell
Plumber Pippin	Super Mushroom	Spring Mushroom	Left Handed	Curly Hair	Bob Omb Drop
Squire Spike	Penguin Suit	Spring Mushroom	Left Handed	Curly Hair	Banana Peel
Officer Olive	Fire Flower	Dash Boots	Right Handed	Spiky Hair	Koopa Shell
Guard Rufus	Super Leaf	Propeller Box	Left Handed	Spiky Hair	Banana Peel
Professor Pipe	Penguin Suit	Dash Boots	Left Handed	Smooth Hair	Banana Peel
Plumber Paolo	Ice Flower	Spring Mushroom	Right Handed	Smooth Hair	Koopa Shell
Plumber Bruno	Super Leaf	Mini Mushroom	Left Handed	Smooth Hair	Bob Omb Drop
Captain Copper	Super Mushroom	Cloud Flower	Left Handed	Smooth Hair	Banana Peel
Racer Rita	Penguin Suit	Propeller Box	Right Handed	Smooth Hair	Koopa Shell
Prince Pippo	Super Mushroom	Propeller Box	Left Handed	Spiky Hair	Koopa Shell
Plumber Marco	Super Leaf	Cloud Flower	Left Handed	Spiky Hair	Bob Omb Drop
Chef Toadette	Penguin Suit	Propeller Box	Left Handed	Smooth Hair	Banana Peel
Agent Archie	Super Mushroom	Cloud Flower	Right Handed	Spiky Hair	Koopa Shell

CLUE 1 Place value

The vault keypad has a glowing digit code. A note shows the exact place value of the key digit.

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

T																		T		
4000	300	90	20	1000	900	900	50	1000	8000	9000	60	90	3000	8000	60	4000				
70	3000	90	50	100	200	60	100	90	900	900	90	200	10	60	400					

What is the value of the 4 in 4,011? ☐ → T

What is the value of the 3 in 300? ☐ → H

What is the value of the 3 in 3,057? ☐ → S

What is the value of the 9 in 964? ☐ → L

What is the value of the 1 in 3,219? ☐ → B

What is the value of the 1 in 126? ☐ → P

What is the value of the 8 in 8,321? ☐ → N

What is the value of the 9 in 9,355? ☐ → D

What is the value of the 7 in 974? ☐ → U

What is the value of the 2 in 8,328? ☐ → V

What is the value of the 2 in 270? ☐ → R

What is the value of the 1 in 1,466? ☐ → I

What is the value of the 4 in 410? ☐ → X

What is the value of the 5 in 1,251? ☐ → A

What is the value of the 6 in 3,265? ☐ → O

What is the value of the 9 in 396? ☐ → E

Scratch space:

CLUE 2 Addition

The castle guards tally up the shiny gold coins found along the secret warp pipe path.

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



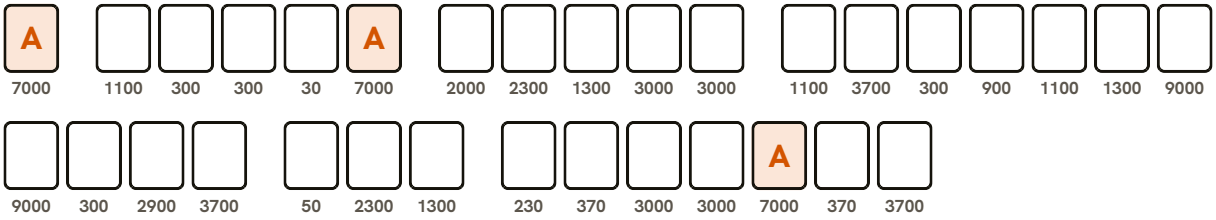
1941 + 4155 = ☐ → T	1920 + 3506 = ☐ → D	2506 + 1108 = ☐ → I
3459 + 3376 = ☐ → R	2088 + 1841 = ☐ → W	2021 + 3615 = ☐ → N
5849 + 3584 = ☐ → E	4283 + 4919 = ☐ → A	5826 + 3056 = ☐ → H
5466 + 3934 = ☐ → G	3240 + 5752 = ☐ → S	3329 + 2691 = ☐ → L
2323 + 2848 = ☐ → U	2047 + 1811 = ☐ → V	

Scratch space:

CLUE 3 Rounding

The pipe radar tracks the intruder distance, but the display rounds all numbers to the nearest hundred.

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



Round 6,779 to the nearest thousand ☐ → A

Round 3,694 to the nearest hundred ☐ → N

Round 898 to the nearest hundred ☐ → C

Round 27 to the nearest ten ☐ → P

Round 374 to the nearest ten ☐ → I

Round 1,092 to the nearest hundred ☐ → K

Round 8,685 to the nearest thousand ☐ → D

Round 2,327 to the nearest hundred ☐ → H

Round 3,390 to the nearest thousand ☐ → L

Round 259 to the nearest hundred ☐ → O

Round 233 to the nearest ten ☐ → V

Round 2,047 to the nearest thousand ☐ → S

Round 49 to the nearest ten ☐ → T

Round 1,253 to the nearest hundred ☐ → E

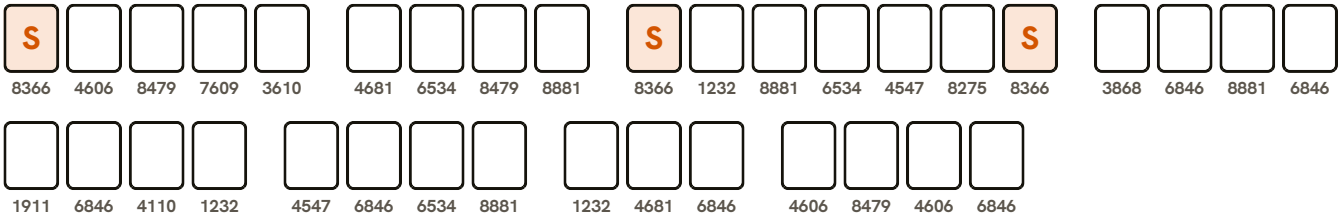
Round 2,892 to the nearest hundred ☐ → W

Scratch space:

CLUE 4 Subtraction

> The repair crew measures how many extra power mushrooms remain after subtracting the stolen stock.

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



12618 - 4252 = ☐ → S	5571 - 1024 = ☐ → N	7397 - 2716 = ☐ → H
4954 - 3722 = ☐ → T	5584 - 1974 = ☐ → Y	5567 - 3656 = ☐ → L
7254 - 3144 = ☐ → F	10637 - 2362 = ☐ → D	7920 - 4052 = ☐ → W
10439 - 3593 = ☐ → E	11366 - 4832 = ☐ → A	5482 - 876 = ☐ → P
11032 - 2151 = ☐ → R	9154 - 675 = ☐ → I	12503 - 4894 = ☐ → K

Scratch space:

CLUE 5

Division facts (1-12) - the last clue

> The team splits the recovered star bits equally into glowing prize boxes to find the final secret.

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:

30 ÷ 6 = ☐	48 ÷ 4 = ☐	132 ÷ 12 = ☐	1 ÷ 1 = ☐	27 ÷ 3 = ☐
48 ÷ 12 = ☐	10 ÷ 5 = ☐	63 ÷ 9 = ☐	42 ÷ 7 = ☐	80 ÷ 8 = ☐
88 ÷ 11 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain shot bright fireballs, then made cloud platforms.
2. The villain froze the warp pipes, then flew up into the sky.
3. The villain shot bright fireballs, then dashed past the guards.
4. The villain slid across blue ice, then made cloud platforms.
5. The villain grew double in size, then made cloud platforms.
6. The villain slid across blue ice, then flew up into the sky.
7. The villain shot bright fireballs, then squeaked through tiny cracks.
8. The villain floated using a tail, then squeaked through tiny cracks.
9. The villain slid across blue ice, then bounced high over walls.
10. The villain grew double in size, then flew up into the sky.
11. The villain grew double in size, then squeaked through tiny cracks.
12. The villain froze the warp pipes, then squeaked through tiny cracks.

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TEACHER / PARENT

Answer Key

The Great Pipe Kingdom Mystery

Culprit: Officer Olive

Fire Flower · Dash Boots · Right Handed · Spiky Hair · Koopa Shell

Trail: Start 21 → Clue 1 15 → Clue 2 7 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT USE A PROPELLER BOX"

What is the value of the 4 in 4,011? = 4000 (T) · What is the value of the 3 in 300? = 300 (H) · What is the value of the 3 in 3,057? = 3000 (S) · What is the value of the 9 in 964? = 900 (L) · What is the value of the 1 in 3,219? = 10 (B) · What is the value of the 1 in 126? = 100 (P) · What is the value of the 8 in 8,321? = 8000 (N) · What is the value of the 9 in 9,355? = 9000 (D) · What is the value of the 7 in 974? = 70 (U) · What is the value of the 2 in 8,328? = 20 (V) · What is the value of the 2 in 270? = 200 (R) · What is the value of the 1 in 1,466? = 1000 (I) · What is the value of the 4 in 410? = 400 (X) · What is the value of the 5 in 1,251? = 50 (A) · What is the value of the 6 in 3,265? = 60 (O) · What is the value of the 9 in 396? = 90 (E)

Clue 2 (Addition): "THE VILLAIN WAS SEEN USING THEIR RIGHT HAND"

1941 + 4155 = 6096 (T) · 1920 + 3506 = 5426 (D) · 2506 + 1108 = 3614 (I) · 3459 + 3376 = 6835 (R) · 2088 + 1841 = 3929 (W) · 2021 + 3615 = 5636 (N) · 5849 + 3584 = 9433 (E) · 4283 + 4919 = 9202 (A) · 5826 + 3056 = 8882 (H) · 5466 + 3934 = 9400 (G) · 3240 + 5752 = 8992 (S) · 3329 + 2691 = 6020 (L) · 2323 + 2848 = 5171 (U) · 2047 + 1811 = 3858 (V)

Clue 3 (Rounding): "A KOOPA SHELL KNOCKED DOWN THE VILLAIN"

Round 6,779 to the nearest thousand = 7000 (A) · Round 3,694 to the nearest hundred = 3700 (N) · Round 898 to the nearest hundred = 900 (C) · Round 27 to the nearest ten = 30 (P) · Round 374 to the nearest ten = 370 (I) · Round 1,092 to the nearest hundred = 1100 (K) · Round 8,685 to the nearest thousand = 9000 (D) · Round 2,327 to the nearest hundred = 2300 (H) · Round 3,390 to the nearest thousand = 3000 (L) · Round 259 to the nearest hundred = 300 (O) · Round 233 to the nearest ten = 230 (V) · Round 2,047 to the nearest thousand = 2000 (S) · Round 49 to the nearest ten = 50 (T) · Round 1,253 to the nearest hundred = 1300 (E) · Round 2,892 to the nearest hundred = 2900 (W)

Clue 4 (Subtraction): "SPIKY HAIR STRANDS WERE LEFT NEAR THE PIPE"

12618 - 4252 = 8366 (S) · 5571 - 1024 = 4547 (N) · 7397 - 2716 = 4681 (H) · 4954 - 3722 = 1232 (T) · 5584 - 1974 = 3610 (Y) · 5567 - 3656 = 1911 (L) · 7254 - 3144 = 4110 (F) · 10637 - 2362 = 8275 (D) · 7920 - 4052 = 3868 (W) · 10439 - 3593 = 6846 (E) · 11366 - 4832 = 6534 (A) · 5482 - 876 = 4606 (P) · 11032 - 2151 = 8881 (R) · 9154 - 675 = 8479 (I) · 12503 - 4894 = 7609 (K)

Clue 5 (Division facts (1-12)): surviving statement is box 3 → Officer Olive

30 ÷ 6 = 5 · 48 ÷ 4 = 12 · 132 ÷ 12 = 11 · 1 ÷ 1 = 1 · 27 ÷ 3 = 9 · 48 ÷ 12 = 4 · 10 ÷ 5 = 2 · 63 ÷ 9 = 7 · 42 ÷ 7 = 6 · 80 ÷ 8 = 10 · 88 ÷ 11 = 8