



The Grand Castle Caper

Grade 4 math · Multiplication, Word problems, Fractions of a number, Multi-step word problems · Reading level grades 3-4

Detective: _____ Date: _____

Oh no! Bowser's sneaky minions have broken into Peach's Castle and swiped the legendary Golden Grand Star! Princess Peach needs your expert detective skills to track down the thief before they can escape back to the Dark Land. Use your math skills to crack the case!

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 thief is _____

Possible suspects

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

NAME	SUPER ITEM	KART VEHICLE	STEERING HAND	HAT STYLE	OBSTACLE WEAKNESS
Buzzy Beetle	Super Leaf Flight	Pipe Frame Gliding	Right-handed Steering	Red Emblem Cap	Toasted by Fireballs
Goomba	Tanooki Suit Spin	Biddybuggy Drift	Left-handed Steering	Spiked Iron Helmet	Toasted by Fireballs
Petey Piranha	Propeller Helmet Lift	Mach 8 Turbo	Left-handed Steering	Red Emblem Cap	Blasted by Bob-ombs
Donkey Kong	Tanooki Suit Spin	Pipe Frame Gliding	Left-handed Steering	Spiked Iron Helmet	Slipping on Banana Peels
Birdo	Fire Flower Power	Pipe Frame Gliding	Left-handed Steering	Red Emblem Cap	Toasted by Fireballs
Shy Guy	Super Leaf Flight	Standard Kart Speed	Right-handed Steering	Red Emblem Cap	Slipping on Banana Peels
Dry Bones	Super Leaf Flight	Landship Armor	Left-handed Steering	Red Emblem Cap	Toasted by Fireballs
Wiggler	Ice Flower Power	Standard Kart Speed	Left-handed Steering	Red Emblem Cap	Toasted by Fireballs
Lakitu	Ice Flower Power	Landship Armor	Left-handed Steering	Green Emblem Cap	Toasted by Fireballs
Koopa Troopa	Tanooki Suit Spin	Pipe Frame Gliding	Right-handed Steering	Spiked Iron Helmet	Slipping on Banana Peels
Kamek	Super Leaf Flight	Standard Kart Speed	Left-handed Steering	Green Emblem Cap	Blasted by Bob-ombs
Rosalina	Propeller Helmet Lift	Landship Armor	Left-handed Steering	Red Emblem Cap	Toasted by Fireballs
King Boo	Fire Flower Power	Landship Armor	Left-handed Steering	Green Emblem Cap	Blasted by Bob-ombs
Yoshi	Super Leaf Flight	Pipe Frame Gliding	Right-handed Steering	Green Emblem Cap	Toasted by Fireballs
Luigi	Fire Flower Power	Mach 8 Turbo	Left-handed Steering	Red Emblem Cap	Toasted by Fireballs
Wario	Super Leaf Flight	Landship Armor	Left-handed Steering	Spiked Iron Helmet	Toasted by Fireballs
Hammer Bro	Fire Flower Power	Biddybuggy Drift	Left-handed Steering	Green Emblem Cap	Toasted by Fireballs
Daisy	Ice Flower Power	Mach 8 Turbo	Left-handed Steering	Spiked Iron Helmet	Toasted by Fireballs
Diddy Kong	Super Leaf Flight	Standard Kart Speed	Left-handed Steering	Red Emblem Cap	Slipping on Banana Peels
Mario	Propeller Helmet Lift	Pipe Frame Gliding	Left-handed Steering	Red Emblem Cap	Toasted by Fireballs
Toad	Fire Flower Power	Mach 8 Turbo	Left-handed Steering	Spiked Iron Helmet	Toasted by Fireballs

Multiplication facts (1-12)

Toad wants to count the stolen gold coins, but the Goombas mixed up the bags. Let's solve these coin word problems to find our first big lead!

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

A 2x12 grid of boxes. The top row contains the following sequence: an orange box with 'T', three empty boxes, an orange box with 'T', three empty boxes, five empty boxes, four empty boxes, two empty boxes, and an orange box with 'T'. The bottom row contains the following sequence: five empty boxes, one empty box, two empty boxes, four empty boxes, four empty boxes, two empty boxes, and two empty boxes.

T				T															T
55	72	20		55	72	64	20	120		90	49	20	35		9	49		55	
90	48	64	132	20		40		84	40	9	90	35	72	64	63				

$$5 \times 11 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$7 \times 12 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$6 \times 12 = \boxed{} \rightarrow \boxed{\text{H}}$$

$8 \times 6 = \boxed{} \rightarrow \boxed{\mathbf{R}}$

$9 \times 7 = \boxed{} \rightarrow \boxed{\text{P}}$

$$8 \times 8 = \boxed{} \rightarrow \boxed{1}$$

$11 \times 12 = \boxed{} \rightarrow \boxed{\mathbf{v}}$

$1 \times 9 = \boxed{} \rightarrow \boxed{\text{N}}$

$9 \times 10 = \boxed{} \rightarrow \boxed{\text{D}}$

$7 \times 7 = \boxed{} \rightarrow \boxed{0}$

$8 \times 5 = \boxed{} \rightarrow \boxed{\mathbf{A}}$

$10 \times 12 =$ $\rightarrow$ **F**

$5 \times 7 = \square \rightarrow \mathbf{S}$

$10 \times 2 = \square \rightarrow \boxed{\mathbf{E}}$

Scratch space:

CLUE 2

Word problems

Luigi found rows of mysterious question blocks lined up in the courtyard. If we multiply the rows of blocks, we can unlock a secret map!

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

A witness saw the villain was

L							D		D	S				R	I		G
40	10	79	8	15	59	75		10			8	10	10			75	

Toad lined up 5 rows of 8 green shells. How many green shells in all?

Answer: → **L**

Toad found 2 super mushrooms yesterday and 8 more today. How many super mushrooms in all?

Answer: → **E**

There were 79 super mushrooms. 20 were used up. How many super mushrooms are left?

Answer: → **A**

Toad lined up 3 rows of 5 green shells. How many green shells in all?

Answer: → **H**

Toad found 25 fire flowers yesterday and 54 more today. How many fire flowers in all?

Answer: → **F**

Toad found 2 star medals yesterday and 6 more today. How many star medals in all?

Answer: → **T**

Toad found 72 super mushrooms yesterday and 3 more today. How many super mushrooms in all?

Answer: → **N**

Scratch space:

CLUE 3
Fractions of a number

Yoshi is sharing a giant basket of melons with his friends. Help him calculate exactly what fraction of the melons each hungry dinosaur gets!

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

T															
29	38	33	19	21	26	40	26	36	26	19	36	38	33	40	26
															T
28	9	21	33	10	26	20	20	28	20	33	36	39	26	12	29

$1/4 \text{ of } 116 = \square \rightarrow \text{ **T** }$

$1/10 \text{ of } 200 = \square \rightarrow \text{ **L** }$

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

$3/10 \text{ of } 30 = \square \rightarrow \text{ **I** }$

$5/10 \text{ of } 78 = \square \rightarrow \text{ **P** }$

$3/4 \text{ of } 28 = \square \rightarrow \text{ **R** }$

$4/8 \text{ of } 66 = \square \rightarrow \text{ **E** }$

$4/5 \text{ of } 45 = \square \rightarrow \text{ **W** }$

$1/3 \text{ of } 114 = \square \rightarrow \text{ **H** }$

$4/10 \text{ of } 70 = \square \rightarrow \text{ **F** }$

$1/5 \text{ of } 130 = \square \rightarrow \text{ **A** }$

$1/6 \text{ of } 72 = \square \rightarrow \text{ **S** }$

$2/3 \text{ of } 60 = \square \rightarrow \text{ **N** }$

$3/6 \text{ of } 20 = \square \rightarrow \text{ **B** }$

Scratch space:

CLUE 4

Multi-step word problems

Princess Peach needs to pack super mushrooms for the journey, but she must add the red ones, subtract the bad ones, and double the rest!

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

A strand of R A P hair turned up at the scene.

14 65 67 65 59 57 32 65 59 35

There were 94 super mushrooms in all. 4 Mushroom Kingdom Grand Prix used 13 super mushrooms each. The other 3 Mushroom Kingdom Grand Prix shared the rest equally. How many super mushrooms did each of the other Mushroom Kingdom Grand Prix get?

Answer: → R

Toad earned 6 star medals in each of 6 rounds, plus 5 bonus star medals. Then 9 star medals were lost. How many star medals are left?

Answer: → L

There were 313 super mushrooms in all. 33 super mushrooms were set aside. The rest were shared equally among 8 Mushroom Kingdom Grand Prix. How many super mushrooms did each get?

Answer: → C

Toad earned 5 fire flowers in each of 3 rounds, plus 45 bonus fire flowers. Then 1 fire flowers were lost. How many fire flowers are left?

Answer: → M

There were 634 fire flowers in all. 31 fire flowers were set aside. The rest were shared equally among 9 Mushroom Kingdom Grand Prix. How many fire flowers did each get?

Answer: → D

Toad collected 197 gold coins in the morning and 31 gold coins in the afternoon, then split them equally among 4 Mushroom Kingdom Grand Prix. How many gold coins did each get?

Answer: → B

There were 169 green shells in all. 1 Mushroom Kingdom Grand Prix used 39 green shells each. The other 2 Mushroom Kingdom Grand Prix shared the rest equally. How many green shells did each of the other Mushroom Kingdom Grand Prix get?

Answer: → E

Scratch space:

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

We found a chest of shiny power stars, but only a fraction of them still have magic. Let's count the active stars to get 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:

$1/8 \text{ of } 40 = \boxed{}$

$1/6 \text{ of } 6 = \boxed{}$

$1/3 \text{ of } 33 = \boxed{}$

$7/10 \text{ of } 10 = \boxed{}$

$1/2 \text{ of } 6 = \boxed{}$

$2/8 \text{ of } 24 = \boxed{}$

$1/8 \text{ of } 64 = \boxed{}$

$1/8 \text{ of } 16 = \boxed{}$

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

$6/10 \text{ of } 15 = \boxed{}$

$1/2 \text{ of } 20 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain zoomed into the sky with a loud whirring sound, then tumbled down the secret pipe frame tunnel.
2. The villain zoomed into the sky with a loud whirring sound, then crashed through the stone gates in a landship.
3. The villain froze the castle doors solid with ice, then drifted around the courtyard in a biddybuggy.
4. The villain flung a bunch of fireballs at the guards, then sped away in a standard blue kart.
5. The villain flung a bunch of fireballs at the guards, then zipped past the goal pole in a mach eight.
6. The villain froze the castle doors solid with ice, then crashed through the stone gates in a landship.
7. The villain spun through the wooden barricades, then sped away in a standard blue kart.
8. The villain flung a bunch of fireballs at the guards, then crashed through the stone gates in a landship.
9. The villain floated over the high castle walls, then tumbled down the secret pipe frame tunnel.
10. The villain floated over the high castle walls, then zipped past the goal pole in a mach eight.
11. The villain froze the castle doors solid with ice, then sped away in a standard blue kart.
12. The villain flung a bunch of fireballs at the guards, then tumbled down the secret pipe frame tunnel.

Answer Key

The Grand Castle Caper

Culprit: Birdo

Fire Flower Power · Pipe Frame Gliding · Left-handed Steering · Red Emblem Cap · Toasted by Fireballs

Trail: Start 21 → Clue 1 16 → Clue 2 12 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE THIEF DOES NOT DRIVE A LANDSHIP"

$5 \times 11 = 55$ (T) · $7 \times 12 = 84$ (L) · $6 \times 12 = 72$ (H) · $8 \times 6 = 48$ (R) · $9 \times 7 = 63$ (P) · $8 \times 8 = 64$ (I) · $11 \times 12 = 132$ (V) · $1 \times 9 = 9$ (N) · $9 \times 10 = 90$ (D) · $7 \times 7 = 49$ (O) · $8 \times 5 = 40$ (A) · $10 \times 12 = 120$ (F) · $5 \times 7 = 35$ (S) · $10 \times 2 = 20$ (E)

Clue 2 (Word problems): "LEFT HANDED STEERING"

Toad lined up 5 rows of 8 green shells. How many green shells in all? = 40 (L) · Toad found 2 super mushrooms yesterday and 8 more today. How many super mushrooms in all? = 10 (E) · There were 79 super mushrooms. 20 were used up. How many super mushrooms are left? = 59 (A) · Toad lined up 3 rows of 5 green shells. How many green shells in all? = 15 (H) · Toad found 25 fire flowers yesterday and 54 more today. How many fire flowers in all? = 79 (F) · Toad found 2 star medals yesterday and 6 more today. How many star medals in all? = 8 (T) · Toad found 72 super mushrooms yesterday and 3 more today. How many super mushrooms in all? = 75 (N)

Clue 3 (Fractions of a number): "THEY RAN AWAY WHEN A FIREBALL FLEW PAST"

$\frac{1}{4}$ of 116 = 29 (T) · $\frac{1}{10}$ of 200 = 20 (L) · $\frac{2}{4}$ of 38 = 19 (Y) · $\frac{3}{10}$ of 30 = 9 (I) · $\frac{5}{10}$ of 78 = 39 (P) · $\frac{3}{4}$ of 28 = 21 (R) · $\frac{4}{8}$ of 66 = 33 (E) · $\frac{4}{5}$ of 45 = 36 (W) · $\frac{1}{3}$ of 114 = 38 (H) · $\frac{4}{10}$ of 70 = 28 (F) · $\frac{1}{5}$ of 130 = 26 (A) · $\frac{1}{6}$ of 72 = 12 (S) · $\frac{2}{3}$ of 60 = 40 (N) · $\frac{3}{6}$ of 20 = 10 (B)

Clue 4 (Multi-step word problems): "RED EMBLEM CAP"

There were 94 super mushrooms in all. 4 Mushroom Kingdom Grand Prix used 13 super mushrooms each. The other 3 Mushroom Kingdom Grand Prix shared the rest equally. How many super mushrooms did each of the other Mushroom Kingdom Grand Prix get? = 14 (R) · Toad earned 6 star medals in each of 6 rounds, plus 5 bonus star medals. Then 9 star medals were lost. How many star medals are left? = 32 (L) · There were 313 super mushrooms in all. 33 super mushrooms were set aside. The rest were shared equally among 8 Mushroom Kingdom Grand Prix. How many super mushrooms did each get? = 35 (C) · Toad earned 5 fire flowers in each of 3 rounds, plus 45 bonus fire flowers. Then 1 fire flowers were lost. How many fire flowers are left? = 59 (M) · There were 634 fire flowers in all. 31 fire flowers were set aside. The rest were shared equally among 9 Mushroom Kingdom Grand Prix. How many fire flowers did each get? = 67 (D) · Toad collected 197 gold coins in the morning and 31 gold coins in the afternoon, then split them equally among 4 Mushroom Kingdom Grand Prix. How many gold coins did each get? = 57 (B) · There were 169 green shells in all. 1 Mushroom Kingdom Grand Prix used 39 green shells each. The other 2 Mushroom Kingdom Grand Prix shared the rest equally. How many green shells did each of the other Mushroom Kingdom Grand Prix get? = 65 (E)

Clue 5 (Fractions of a number): surviving statement is box 12 → Birdo

$\frac{1}{8}$ of 40 = 5 · $\frac{1}{6}$ of 6 = 1 · $\frac{1}{3}$ of 33 = 11 · $\frac{7}{10}$ of 10 = 7 · $\frac{1}{2}$ of 6 = 3 · $\frac{2}{8}$ of 24 = 6 · $\frac{1}{8}$ of 64 = 8 · $\frac{1}{8}$ of 16 = 2 · $\frac{4}{6}$ of 6 = 4 · $\frac{6}{10}$ of 15 = 9 · $\frac{1}{2}$ of 20 = 10