The Case of the Missing Neon Prize

Grade 5 math · Multiplication, Bar models, Multi-step word problems, Fractions of a number, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

The legendary Golden Joystick has vanished right before the annual Toon Arcade Championships! A sneaky rogue toon pulled off the heist, leaving a trail of high-tech chaos behind. Use your detective skills and solve each mathematical mystery to unmask the culprit before game over!

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 Toon is _____

Possible suspects

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

NAME	GEAR	GADGET	DOMINANT HAND	HAIR COLOR	DISLIKE
Penny Price	Turbo Skates	Sonic Whistles	Right Handed	Electric Blue	Squeaky Toys
Buster Blake	Jet Boots	Sonic Whistles	Right Handed	Neon Purple	Squeaky Toys
Jerry Jinx	Spring Shoes	Magnet Gloves	Right Handed	Bright Yellow	Squeaky Toys
Sly Sammy	Jet Boots	Sonic Whistles	Right Handed	Neon Purple	Soapy Water
Dexter Duke	Jet Boots	Decoy Drones	Left Handed	Bright Yellow	Soapy Water
Ziggy Zane	Grapple Hook	Sonic Whistles	Right Handed	Neon Purple	Soapy Water
Hazel Hope	Grapple Hook	Laser Goggles	Right Handed	Bright Yellow	Banana Peels
Rocco Ray	Glider Wings	Sonic Whistles	Right Handed	Neon Purple	Soapy Water
Dingo Dan	Spring Shoes	Decoy Drones	Left Handed	Bright Yellow	Squeaky Toys
Monty Miller	Turbo Skates	Sonic Whistles	Left Handed	Electric Blue	Banana Peels
Rusty Reed	Jet Boots	Laser Goggles	Right Handed	Neon Purple	Soapy Water
Donnie Dash	Grapple Hook	Sonic Whistles	Left Handed	Electric Blue	Squeaky Toys
Gonzo Gary	Turbo Skates	Smoke Bombs	Left Handed	Neon Purple	Soapy Water
Trixie Todd	Turbo Skates	Smoke Bombs	Right Handed	Neon Purple	Soapy Water
Fiona Fox	Spring Shoes	Sonic Whistles	Left Handed	Electric Blue	Soapy Water
Barney Birch	Grapple Hook	Smoke Bombs	Right Handed	Bright Yellow	Soapy Water
Vinnie Vance	Spring Shoes	Magnet Gloves	Left Handed	Electric Blue	Banana Peels
Cleo Chase	Grapple Hook	Decoy Drones	Right Handed	Neon Purple	Squeaky Toys
Pip Parker	Glider Wings	Smoke Bombs	Right Handed	Bright Yellow	Soapy Water
Otto Owens	Turbo Skates	Laser Goggles	Left Handed	Bright Yellow	Soapy Water
Quinn Quick	Turbo Skates	Decoy Drones	Right Handed	Neon Purple	Squeaky Toys

CLUE 1 Multiplication facts (1-12)

> The Arcade Manager counts stacks of game tokens arranged in equal rows across the floor to locate the dropped clue.

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

T																			T		
14	96	16	110	80	88	88	35	80	15	48	60	16	22	15	60	14					
72	22	16	88	35	22	16	1	3	60	3	3	88	16	22							

7 × 2 = ☐ → T	3 × 1 = ☐ → G	5 × 7 = ☐ → A	8 × 10 = ☐ → I
12 × 8 = ☐ → H	8 × 6 = ☐ → D	5 × 3 = ☐ → N	2 × 8 = ☐ → E
10 × 6 = ☐ → O	1 × 1 = ☐ → R	10 × 11 = ☐ → V	
11 × 8 = ☐ → L	2 × 11 = ☐ → S	8 × 9 = ☐ → U	

Scratch space:

CLUE 2 Bar model word problems

To compare the length of two mysterious wire tracks, the detective sketches a bar model of the total evidence.

Draw a bar model to solve each word problem, then write its letter in the boxes to fill in the missing word.

A witness saw the villain was

R								D	E	D
73	8	123	142	18	142	84	119			

.

One group collected 31 snack vouchers and another group collected 42 snack vouchers. How many snack vouchers in all?

draw a bar model

Answer: ☐ → R

Arcade Manager shares 238 golden coins equally among 2 teams. How many golden coins does each team get?

draw a bar model

Answer: ☐ → N

One group collected 35 golden coins and another group collected 49 golden coins. How many golden coins in all?

draw a bar model

Answer: ☐ → A

The red team has 161 game tickets and the blue team has 38 game tickets. How many more game tickets does the red team have?

draw a bar model

Answer: ☐ → G

Arcade Manager has 3 times as many neon prizes as a teammate. The teammate has 6 neon prizes. How many neon prizes does Arcade Manager have?

draw a bar model

Answer: ☐ → T

Arcade Manager has 4 times as many golden coins as a teammate. The teammate has 2 golden coins. How many golden coins does Arcade Manager have?

draw a bar model

Answer: ☐ → I

There were 149 neon prizes in all. 7 neon prizes were used. How many neon prizes are left?

draw a bar model

Answer: ☐ → H

CLUE 3 Multi-step word problems

Sorting out ticket prizes requires a multi-step calculation before revealing the next hidden security note.

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

Someone scared the villain off with

S								E	R
29	84	82	17	80	39	82	58		

.

There were 116 game tickets in all. 2 Toon Patrol used 29 game tickets each. The other 2 Toon Patrol shared the rest equally. How many game tickets did each of the other Toon Patrol get?

Answer: ☐ → **S**

Arcade Manager filled 7 boxes with 8 game tickets each, then found 26 more game tickets. How many game tickets are there in all?

Answer: ☐ → **A**

Arcade Manager collected 190 golden coins in the morning and 210 golden coins in the afternoon, then split them equally among 5 Toon Patrol. How many golden coins did each get?

Answer: ☐ → **Y**

Arcade Manager filled 5 boxes with 3 golden coins each, then found 24 more golden coins. How many golden coins are there in all?

Answer: ☐ → **W**

Arcade Manager collected 90 game tickets in the morning and 12 game tickets in the afternoon, then split them equally among 6 Toon Patrol. How many game tickets did each get?

Answer: ☐ → **P**

Arcade Manager filled 7 boxes with 8 game tickets each, then found 2 more game tickets. How many game tickets are there in all?

Answer: ☐ → **T**

There were 275 snack vouchers in all. 23 snack vouchers were set aside. The rest were shared equally among 3 Toon Patrol. How many snack vouchers did each get?

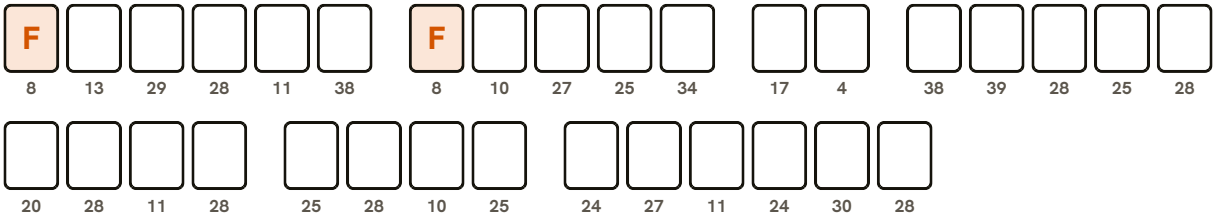
Answer: ☐ → **O**

Scratch space:

CLUE 4 Fractions of a number

Only a fraction of the neon glowing footprints remain visible under the blacklight in the prize vault.

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



4/6 of 12 = ☐ → F

2/6 of 75 = ☐ → N

1/3 of 117 = ☐ → C

1/4 of 108 = ☐ → U

5/6 of 12 = ☐ → O

5/10 of 56 = ☐ → E

4/10 of 95 = ☐ → S

1/6 of 102 = ☐ → A

1/3 of 39 = ☐ → I

3/4 of 40 = ☐ → L

2/6 of 33 = ☐ → R

2/4 of 68 = ☐ → D

1/4 of 16 = ☐ → T

2/6 of 87 = ☐ → B

3/5 of 40 = ☐ → P

2/3 of 30 = ☐ → W

Scratch space:

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

> The leftover game cards must be split equally into prize bins to unlock the encrypted surveillance room door.

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:

20 ÷ 5 = ☐	60 ÷ 5 = ☐	72 ÷ 12 = ☐	120 ÷ 12 = ☐	20 ÷ 4 = ☐
12 ÷ 4 = ☐	33 ÷ 3 = ☐	72 ÷ 9 = ☐	22 ÷ 11 = ☐	27 ÷ 3 = ☐
42 ÷ 6 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain glides on glider wings, then blows sonic whistles.
2. The villain glides on glider wings, then flashes laser goggles.
3. The villain bounces on spring shoes, then activates magnet gloves.
4. The villain dashes on turbo skates, then drops smoke bombs.
5. The villain dashes on turbo skates, then blows sonic whistles.
6. The villain zips with a grapple hook, then blows sonic whistles.
7. The villain glides on glider wings, then deploys decoy drones.
8. The villain launches with jet boots, then deploys decoy drones.
9. The villain dashes on turbo skates, then deploys decoy drones.
10. The villain dashes on turbo skates, then flashes laser goggles.
11. The villain zips with a grapple hook, then activates magnet gloves.
12. The villain launches with jet boots, then blows sonic whistles.

TEACHER / PARENT

Answer Key

The Case of the Missing Neon Prize

Culprit: Rocco Ray

Glider Wings · Sonic Whistles · Right Handed · Neon Purple · Soapy Water

Trail: Start 21 → Clue 1 18 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE LASER GOGGLES"

7 × 2 = 14 (T) · 3 × 1 = 3 (G) · 5 × 7 = 35 (A) · 8 × 10 = 80 (I) · 12 × 8 = 96 (H) · 8 × 6 = 48 (D) · 5 × 3 = 15 (N) · 2 × 8 = 16 (E) · 10 × 6 = 60 (O) · 1 × 1 = 1 (R) · 10 × 11 = 110 (V) · 11 × 8 = 88 (L) · 2 × 11 = 22 (S) · 8 × 9 = 72 (U)

Clue 2 (Bar model word problems): "RIGHT HANDED"

One group collected 31 snack vouchers and another group collected 42 snack vouchers. How many snack vouchers in all? = 73 (R) · Arcade Manager shares 238 golden coins equally among 2 teams. How many golden coins does each team get? = 119 (N) · One group collected 35 golden coins and another group collected 49 golden coins. How many golden coins in all? = 84 (A) · The red team has 161 game tickets and the blue team has 38 game tickets. How many more game tickets does the red team have? = 123 (G) · Arcade Manager has 3 times as many neon prizes as a teammate. The teammate has 6 neon prizes. How many neon prizes does Arcade Manager have? = 18 (T) · Arcade Manager has 4 times as many golden coins as a teammate. The teammate has 2 golden coins. How many golden coins does Arcade Manager have? = 8 (I) · There were 149 neon prizes in all. 7 neon prizes were used. How many neon prizes are left? = 142 (H)

Clue 3 (Multi-step word problems): "SOAPY WATER"

There were 116 game tickets in all. 2 Toon Patrol used 29 game tickets each. The other 2 Toon Patrol shared the rest equally. How many game tickets did each of the other Toon Patrol get? = 29 (S) · Arcade Manager filled 7 boxes with 8 game tickets each, then found 26 more game tickets. How many game tickets are there in all? = 82 (A) · Arcade Manager collected 190 golden coins in the morning and 210 golden coins in the afternoon, then split them equally among 5 Toon Patrol. How many golden coins did each get? = 80 (Y) · Arcade Manager filled 5 boxes with 3 golden coins each, then found 24 more golden coins. How many golden coins are there in all? = 39 (W) · Arcade Manager collected 90 game tickets in the morning and 12 game tickets in the afternoon, then split them equally among 6 Toon Patrol. How many game tickets did each get? = 17 (P) · Arcade Manager filled 7 boxes with 8 game tickets each, then found 2 more game tickets. How many game tickets are there in all? = 58 (T) · There were 275 snack vouchers in all. 23 snack vouchers were set aside. The rest were shared equally among 3 Toon Patrol. How many snack vouchers did each get? = 84 (O)

Clue 4 (Fractions of a number): "FIBERS FOUND AT SCENE WERE NEON PURPLE"

4/6 of 12 = 8 (F) · 2/6 of 75 = 25 (N) · 1/3 of 117 = 39 (C) · 1/4 of 108 = 27 (U) · 5/6 of 12 = 10 (O) · 5/10 of 56 = 28 (E) · 4/10 of 95 = 38 (S) · 1/6 of 102 = 17 (A) · 1/3 of 39 = 13 (I) · 3/4 of 40 = 30 (L) · 2/6 of 33 = 11 (R) · 2/4 of 68 = 34 (D) · 1/4 of 16 = 4 (T) · 2/6 of 87 = 29 (B) · 3/5 of 40 = 24 (P) · 2/3 of 30 = 20 (W)

Clue 5 (Division facts (1-12)): surviving statement is box 1 → Rocco Ray

20 ÷ 5 = 4 · 60 ÷ 5 = 12 · 72 ÷ 12 = 6 · 120 ÷ 12 = 10 · 20 ÷ 4 = 5 · 12 ÷ 4 = 3 · 33 ÷ 3 = 11 · 72 ÷ 9 = 8 · 22 ÷ 11 = 2 · 27 ÷ 3 = 9 · 42 ÷ 6 = 7