



The Great Rainbow Reef Cup Mystery

Grade 3 math · Skip counting, Place value, Multi-step word problems, Bar models, Fractions of a number · Reading level grades 3-4

Detective: _____ Date: _____

During the final match of the Pixel League, someone swapped the championship trophy with a giant rubber duck! The Star Goalie saw a mysterious player zooming across the turf just before the lights flickered. Detective Whiskers needs your math skills to inspect the clues, read the field evidence, and find out which striker took the trophy!

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 sneaky striker 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	KICKING FOOT	MANE STYLE	DISTRACTION ITEM
Pernille Harder	Bubble Blast	Sparkle Boots	Left Footed	Purple Fins	Catnip Toys
Tobin Heath	Tail Spin	Whiskered Mask	Left Footed	Golden Tail	Laser Pointers
Sophia Smith	Tail Spin	Whiskered Mask	Right Footed	Purple Fins	Laser Pointers
Aitana Bonmati	Bubble Blast	Coral Crown	Right Footed	Pink Mane	Laser Pointers
Lucy Bronze	Pixel Warp	Sparkle Boots	Right Footed	Purple Fins	Laser Pointers
Marta	Turbo Dash	Neon Horn	Left Footed	Golden Tail	Laser Pointers
Beth Mead	Turbo Dash	Sparkle Boots	Right Footed	Purple Fins	Squeaky Balls
Sam Kerr	Bubble Blast	Neon Horn	Right Footed	Golden Tail	Squeaky Balls
Megan Rapinoe	Tail Spin	Neon Horn	Right Footed	Purple Fins	Squeaky Balls
Keira Walsh	Turbo Dash	Whiskered Mask	Left Footed	Golden Tail	Laser Pointers
Christine Sinclair	Rainbow Kick	Whiskered Mask	Right Footed	Pink Mane	Laser Pointers
Asisat Oshoala	Tail Spin	Glitter Shield	Left Footed	Pink Mane	Catnip Toys
Crystal Dunn	Bubble Blast	Whiskered Mask	Left Footed	Purple Fins	Laser Pointers
Becky Sauerbrunn	Pixel Warp	Neon Horn	Right Footed	Golden Tail	Catnip Toys
Lindsey Horan	Turbo Dash	Sparkle Boots	Left Footed	Pink Mane	Catnip Toys
Mallory Swanson	Pixel Warp	Whiskered Mask	Right Footed	Purple Fins	Laser Pointers
Debinha	Bubble Blast	Glitter Shield	Right Footed	Golden Tail	Laser Pointers
Trinity Rodman	Rainbow Kick	Glitter Shield	Right Footed	Purple Fins	Laser Pointers
Alex Morgan	Pixel Warp	Glitter Shield	Right Footed	Pink Mane	Squeaky Balls
Vivianne Miedema	Turbo Dash	Neon Horn	Left Footed	Golden Tail	Squeaky Balls
Rose Lavelle	Tail Spin	Sparkle Boots	Right Footed	Purple Fins	Laser Pointers

CLUE 1 Skip counting

We counted the ocean energy tokens in equal groups along the field lines to track down our first clue.

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

T																T	
30	18	120	65	42	36	36	35	42	33	27	14	120	70	33	14	30	
								T	T								
12	120	35	60	35	40	36	42	30	30	120	60	70	18	42	120	36	27

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, __, 33, 36 → **T**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 → **E**

Skip-count by 10s. Fill the blank: 10, 20, 30, __, 50, 60 → **G**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, __, 30, 33 → **D**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 → **L**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 → **V**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, __, 40, 45 → **A**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, __, 45, 48 → **I**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 → **O**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, __, 14, 16 → **W**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, __, 70, 80 → **R**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, __, 80, 90 → **S**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, __, 36, 39 → **N**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, __, 20, 22 → **H**

Scratch space:

CLUE 2 Place value

The digital scoreboard flashed pixel digits, and breaking down the place values unlocked secret security notes.

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

T				T											T	
50	5000	10	7000	50	9000	300	60	10	9000	300	7000	9000	300	400	5000	50

			T		
70	900	900	50	10	600

What is the value of the 5 in 359? → **T**

What is the value of the 4 in 8,430? → **G**

What is the value of the 7 in 7,806? → **S**

What is the value of the 7 in 5,074? → **F**

What is the value of the 5 in 5,338? → **H**

What is the value of the 1 in 717? → **E**

What is the value of the 6 in 699? → **D**

What is the value of the 6 in 561? → **K**

What is the value of the 9 in 29,727? → **R**

What is the value of the 9 in 965? → **O**

What is the value of the 3 in 369? → **I**

Scratch space:

CLUE 3

Multi-step word problems

By solving the steps of the arena gear inventory, we worked out the secret message behind the misplaced gear.

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

Someone scared the villain off with

L							I	N	T			
33	9	23	21	16	32	18				21	16	23

There were 358 pixel soccer balls in all. 28 pixel soccer balls were set aside. The rest were shared equally among 10 Rainbow Reef FC. How many pixel soccer balls did each get?

Answer: → **L**

Coach Whiskers earned 2 unicorn badges in each of 6 rounds, plus 23 bonus unicorn badges. Then 14 unicorn badges were lost. How many unicorn badges are left?

Answer: → **E**

There were 166 glitter trophies in all. 38 glitter trophies were set aside. The rest were shared equally among 4 Rainbow Reef FC. How many glitter trophies did each get?

Answer: → **P**

Coach Whiskers collected 26 pixel soccer balls in the morning and 66 pixel soccer balls in the afternoon, then split them equally among 4 Rainbow Reef FC. How many pixel soccer balls did each get?

Answer: → **S**

Coach Whiskers collected 18 unicorn badges in the morning and 18 unicorn badges in the afternoon, then split them equally among 4 Rainbow Reef FC. How many unicorn badges did each get?

Answer: → **A**

Coach Whiskers collected 39 cat bells in the morning and 25 cat bells in the afternoon, then split them equally among 4 Rainbow Reef FC. How many cat bells did each get?

Answer: → **R**

There were 166 pixel soccer balls in all. 2 Rainbow Reef FC used 29 pixel soccer balls each. The other 6 Rainbow Reef FC shared the rest equally. How many pixel soccer balls did each of the other Rainbow Reef FC get?

Answer: → **O**

Scratch space:

CLUE 4

Bar model word problems

Comparing the lengths of rainbow energy bars on the coach board revealed a key piece of physical evidence.

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

A strand of P P N S hair turned up at the scene.

21 37 25 21 33 30 7 29

Coach Whiskers shares 42 cat bells equally among 2 teams. How many cat bells does each team get?

draw a bar model

Answer: → P

Coach Whiskers has 3 times as many pixel soccer balls as a teammate. The teammate has 10 pixel soccer balls. How many pixel soccer balls does Coach Whiskers have?

draw a bar model

Answer: → E

Coach Whiskers has 5 times as many cat bells as a teammate. The teammate has 5 cat bells. How many cat bells does Coach Whiskers have?

draw a bar model

Answer: → R

The red team has 42 glitter trophies and the blue team has 5 glitter trophies. How many more glitter trophies does the red team have?

draw a bar model

Answer: → U

Coach Whiskers has 11 times as many mermaid fins as a teammate. The teammate has 3 mermaid fins. How many mermaid fins does Coach Whiskers have?

draw a bar model

Answer: → L

There were 47 pixel soccer balls in all. 18 pixel soccer balls were used. How many pixel soccer balls are left?

draw a bar model

Answer: → I

One group collected 2 mermaid fins and another group collected 5 mermaid fins. How many mermaid fins in all?

draw a bar model

Answer: → F

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

We took a fraction of the total locker room passes to narrow down the final set of evidence files.

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:

$1/2 \text{ of } 4 = \boxed{}$

$1/10 \text{ of } 10 = \boxed{}$

$1/6 \text{ of } 18 = \boxed{}$

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

$2/10 \text{ of } 20 = \boxed{}$

$1/6 \text{ of } 66 = \boxed{}$

$1/4 \text{ of } 20 = \boxed{}$

$3/8 \text{ of } 32 = \boxed{}$

$5/6 \text{ of } 12 = \boxed{}$

$1/3 \text{ of } 27 = \boxed{}$

$4/5 \text{ of } 10 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain warped pixels to bypass the defense, then lacing up sparkle boots.
2. The villain warped pixels to bypass the defense, then wearing a whiskered mask.
3. The villain spun around with a mermaid tail, then lacing up sparkle boots.
4. The villain warped pixels to bypass the defense, then adjusting a shiny coral crown.
5. The villain warped pixels to bypass the defense, then blocking shots with a glitter shield.
6. The villain spun around with a mermaid tail, then wearing a whiskered mask.
7. The villain warped pixels to bypass the defense, then glowing with a neon horn.
8. The villain dashed turbo fast across the field, then glowing with a neon horn.
9. The villain dashed turbo fast across the field, then adjusting a shiny coral crown.
10. The villain dashed turbo fast across the field, then blocking shots with a glitter shield.
11. The villain spun around with a mermaid tail, then glowing with a neon horn.
12. The villain spun around with a mermaid tail, then adjusting a shiny coral crown.

Answer Key

The Great Rainbow Reef Cup Mystery

Culprit: Sophia Smith

Tail Spin · Whiskered Mask · Right Footed · Purple Fins · Laser Pointers

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Skip counting): "THE VILLAIN DOES NOT WEAR A GLITTER SHIELD"

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, __, 33, 36 = 30 (T) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 = 120 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, __, 50, 60 = 40 (G) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, __, 30, 33 = 27 (D) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 = 36 (L) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 = 65 (V) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, __, 40, 45 = 35 (A) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, __, 45, 48 = 42 (I) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 = 14 (O) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, __, 14, 16 = 12 (W) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, __, 70, 80 = 60 (R) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, __, 80, 90 = 70 (S) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, __, 36, 39 = 33 (N) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, __, 20, 22 = 18 (H)

Clue 2 (Place value): "THE STRIKER IS RIGHT FOOTED"

What is the value of the 5 in 359? = 50 (T) · What is the value of the 4 in 8,430? = 400 (G) · What is the value of the 7 in 7,806? = 7000 (S) · What is the value of the 7 in 5,074? = 70 (F) · What is the value of the 5 in 5,338? = 5000 (H) · What is the value of the 1 in 717? = 10 (E) · What is the value of the 6 in 699? = 600 (D) · What is the value of the 6 in 561? = 60 (K) · What is the value of the 9 in 29,727? = 9000 (R) · What is the value of the 9 in 965? = 900 (O) · What is the value of the 3 in 369? = 300 (I)

Clue 3 (Multi-step word problems): "LASER POINTERS"

There were 358 pixel soccer balls in all. 28 pixel soccer balls were set aside. The rest were shared equally among 10 Rainbow Reef FC. How many pixel soccer balls did each get? = 33 (L) · Coach Whiskers earned 2 unicorn badges in each of 6 rounds, plus 23 bonus unicorn badges. Then 14 unicorn badges were lost. How many unicorn badges are left? = 21 (E) · There were 166 glitter trophies in all. 38 glitter trophies were set aside. The rest were shared equally among 4 Rainbow Reef FC. How many glitter trophies did each get? = 32 (P) · Coach Whiskers collected 26 pixel soccer balls in the morning and 66 pixel soccer balls in the afternoon, then split them equally among 4 Rainbow Reef FC. How many pixel soccer balls did each get? = 23 (S) · Coach Whiskers collected 18 unicorn badges in the morning and 18 unicorn badges in the afternoon, then split them equally among 4 Rainbow Reef FC. How many unicorn badges did each get? = 9 (A) · Coach Whiskers collected 39 cat bells in the morning and 25 cat bells in the afternoon, then split them equally among 4 Rainbow Reef FC. How many cat bells did each get? = 16 (R) · There were 166 pixel soccer balls in all. 2 Rainbow Reef FC used 29 pixel soccer balls each. The other 6 Rainbow Reef FC shared the rest equally. How many pixel soccer balls did each of the other Rainbow Reef FC get? = 18 (O)

Clue 4 (Bar model word problems): "PURPLE FINS"

Coach Whiskers shares 42 cat bells equally among 2 teams. How many cat bells does each team get? = 21 (P) · Coach Whiskers has 3 times as many pixel soccer balls as a teammate. The teammate has 10 pixel soccer balls. How many pixel soccer balls does Coach Whiskers have? = 30 (E) · Coach Whiskers has 5 times as many cat bells as a teammate. The teammate has 5 cat bells. How many cat bells does Coach Whiskers have? = 25 (R) · The red team has 42 glitter trophies and the blue team has 5 glitter trophies. How many more glitter trophies does the red team have? = 37 (U) · Coach Whiskers has 11 times as many mermaid fins as a teammate. The teammate has 3 mermaid fins. How many mermaid fins does Coach Whiskers have? = 33 (L) · There were 47 pixel soccer balls in all. 18 pixel soccer balls were used. How many pixel soccer balls are left? = 29 (I) · One group collected 2 mermaid fins and another group collected 5 mermaid fins. How many mermaid fins in all? = 7 (F)

Clue 5 (Fractions of a number): surviving statement is box 6 → Sophia Smith

$\frac{1}{2}$ of 4 = 2 · $\frac{1}{10}$ of 10 = 1 · $\frac{1}{6}$ of 18 = 3 · $\frac{7}{10}$ of 10 = 7 · $\frac{2}{10}$ of 20 = 4 · $\frac{1}{6}$ of 66 = 11 · $\frac{1}{4}$ of 20 = 5 · $\frac{3}{8}$ of 32 = 12 · $\frac{5}{6}$ of 12 = 10 · $\frac{1}{3}$ of 27 = 9 · $\frac{4}{5}$ of 10 = 8