



The Rainbow Reef Soccer Mystery

Grade 3 math · Place value, Skip counting, Word problems, Bar models, Missing addends · Reading level grades 3-4

Detective: _____ Date: _____

Someone popped the championship soccer ball right before the kickoff at Meow Mermaid Stadium! Detective Whiskers needs your math skills to figure out which star player turned into a stadium prankster.

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 stadium prankster is _____

Possible suspects

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

NAME	SOCCER MOVE	MAGIC GEAR	KICKING FOOT	FUR STYLE	DISTRACTION ITEM
Sam Kerr	Rainbow Dash	Tail Spin	Left Footed	Ocean Blue Fur	Catnip Toys
Leah Williamson	Whiskered Zoom	Star Burst	Left Footed	Ocean Blue Fur	Catnip Toys
Lionel Messi	Pixel Kick	Star Burst	Right Footed	Ocean Blue Fur	Catnip Toys
Alyssa Naeher	Rainbow Dash	Star Burst	Left Footed	Golden Sparkle Fur	Shiny Shells
Lucy Bronze	Rainbow Dash	Horn Blast	Right Footed	Ocean Blue Fur	Shiny Shells
Wendie Renard	Pixel Kick	Horn Blast	Left Footed	Ocean Blue Fur	Shiny Shells
Mary Earps	Bubble Shield	Star Burst	Left Footed	Ocean Blue Fur	Catnip Toys
Bukayo Saka	Rainbow Dash	Laser Paws	Left Footed	Ocean Blue Fur	Catnip Toys
Kylian Mbappe	Whiskered Zoom	Horn Blast	Left Footed	Ocean Blue Fur	Catnip Toys
Marta Vieira	Whiskered Zoom	Laser Paws	Left Footed	Ocean Blue Fur	Soccer Whistles
Debinha	Whiskered Zoom	Tail Spin	Right Footed	Ocean Blue Fur	Shiny Shells
Chloe Kelly	Rainbow Dash	Horn Blast	Left Footed	Ocean Blue Fur	Soccer Whistles
Christine Sinclair	Whiskered Zoom	Horn Blast	Left Footed	Neon Pink Mane	Soccer Whistles
Christian Pulisic	Pixel Kick	Star Burst	Left Footed	Golden Sparkle Fur	Catnip Toys
Cristiano Ronaldo	Pixel Kick	Tail Spin	Right Footed	Neon Pink Mane	Catnip Toys
Alex Morgan	Sparkle Pass	Star Burst	Right Footed	Ocean Blue Fur	Catnip Toys
Jude Bellingham	Bubble Shield	Horn Blast	Right Footed	Golden Sparkle Fur	Shiny Shells
Megan Rapinoe	Bubble Shield	Jelly Float	Right Footed	Neon Pink Mane	Soccer Whistles
Son Heungmin	Pixel Kick	Jelly Float	Right Footed	Neon Pink Mane	Soccer Whistles
Sophia Smith	Rainbow Dash	Horn Blast	Left Footed	Golden Sparkle Fur	Catnip Toys
Pernille Harder	Bubble Shield	Jelly Float	Left Footed	Ocean Blue Fur	Shiny Shells

CLUE 1
Place value

The digital scoreboard at the underwater arena flickered with mysterious place value digit codes.

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

T																T
70	3000	700	9000	1000	20	20	900	1000	80	50	500	700	60	80	500	70
10	60	700	20	900	60	700	30	90	900	2000	60					

What is the value of the 7 in 176?

→

T

What is the value of the 5 in 508?

→

O

What is the value of the 1 in 21,229?

→

I

What is the value of the 8 in 1,080?

→

N

What is the value of the 2 in 32,447?

→

W

What is the value of the 9 in 5,196?

→

P

What is the value of the 2 in 7,327?

→

L

What is the value of the 6 in 460?

→

S

What is the value of the 3 in 73,429?

→

H

What is the value of the 5 in 7,050?

→

D

What is the value of the 3 in 936?

→

R

What is the value of the 9 in 7,984?

→

A

What is the value of the 1 in 210?

→

U

What is the value of the 9 in 39,623?

→

V

What is the value of the 7 in 799?

→

E

Scratch space:

CLUE 2

Glowing paw prints skipped across the pitch in repeating counting jump patterns.

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

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 → **S**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, __, 35, 40 → **R**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, __, 18, 20

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, __, 24, 26 → 0

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, __, 12, 14 → **E**

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

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

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, __, 22, 24 → **U**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, __, 42, 45 → **F**

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, __, 120, 130 → **P**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, __, 90, 100 → **K**

Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 → **I**

Scratch space:

CLUE 3

Word problems

Coach Cleo needed to sort out the equipment problems before solving the next clue.

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

Someone scared the villain off with C Y S .

75 33 66 43 68 47 66 24

Captain Purr found 25 unicorn horns yesterday and 50 more today. How many unicorn horns in all?

Answer: → C

Captain Purr found 27 mermaid flags yesterday and 6 more today. How many mermaid flags in all?

Answer: → A

There were 60 mermaid flags. 17 were used up. How many mermaid flags are left?

Answer: → N

Captain Purr lined up 4 rows of 6 glitter soccer balls. How many glitter soccer balls in all?

Answer: → O

Captain Purr found 51 pixel cleats yesterday and 15 more today. How many pixel cleats in all?

Answer: → T

There were 91 unicorn horns. 23 were used up. How many unicorn horns are left?

Answer: → I

Captain Purr found 14 catnip treats yesterday and 33 more today. How many catnip treats in all?

Answer: → P

Scratch space:

CLUE 4

Bar model word problems

The referee checked the bar models to compare how much energy was used on the field.

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 O U F U R hair turned up at the scene.

20 11 40 45 16 31 7 40

There were 57 glitter soccer balls in all. 37 glitter soccer balls were used. How many glitter soccer balls are left?

draw a bar model

Answer: → O

There were 44 mermaid flags in all. 4 mermaid flags were used. How many mermaid flags are left?

draw a bar model

Answer: → E

Captain Purr shares 124 pixel cleats equally among 4 teams. How many pixel cleats does each team get?

draw a bar model

Answer: → B

Captain Purr shares 49 glitter soccer balls equally among 7 teams. How many glitter soccer balls does each team get?

draw a bar model

Answer: → L

Captain Purr has 110 glitter soccer balls, packed 10 to a bag. How many bags can be filled?

draw a bar model

Answer: → C

Captain Purr has 2 times as many catnip treats as a teammate. The teammate has 8 catnip treats. How many catnip treats does Captain Purr have?

draw a bar model

Answer: → N

Captain Purr has 5 times as many pixel cleats as a teammate. The teammate has 9 pixel cleats. How many pixel cleats does Captain Purr have?

draw a bar model

Answer: → A

CLUE 5**Missing addends - the last clue**

Some magical catnip balls were missing from the supply box and needed to be added back.

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:

$7 + \underline{\quad} = 13$

$3 + \underline{\quad} = 7$

$6 + \underline{\quad} = 18$

$10 + \underline{\quad} = 19$

$8 + \underline{\quad} = 9$

$9 + \underline{\quad} = 16$

$6 + \underline{\quad} = 9$

$2 + \underline{\quad} = 12$

$1 + \underline{\quad} = 3$

$8 + \underline{\quad} = 13$

$6 + \underline{\quad} = 14$

Step 2 - cross out the sentence with each answer:

1. The villain did a pixel kick, then shot a star burst.
2. The villain used rainbow dash, then floated on jelly.
3. The villain threw a sparkle pass, then floated on jelly.
4. The villain used whiskered zoom, then blasted a unicorn horn.
5. The villain did a pixel kick, then floated on jelly.
6. The villain used rainbow dash, then spun a mermaid tail.
7. The villain activated a bubble shield, then spun a mermaid tail.
8. The villain activated a bubble shield, then fired laser paws.
9. The villain activated a bubble shield, then blasted a unicorn horn.
10. The villain threw a sparkle pass, then shot a star burst.
11. The villain activated a bubble shield, then shot a star burst.
12. The villain used whiskered zoom, then shot a star burst.

Answer Key

The Rainbow Reef Soccer Mystery

Culprit: Mary Earps

Bubble Shield · Star Burst · Left Footed · Ocean Blue Fur · Catnip Toys

Trail: Start 21 → Clue 1 19 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT USE LASER PAWS"

What is the value of the 7 in 176? = 70 (T) · What is the value of the 5 in 508? = 500 (O) · What is the value of the 1 in 21,229? = 1000 (I) · What is the value of the 8 in 1,080? = 80 (N) · What is the value of the 2 in 32,447? = 2000 (W) · What is the value of the 9 in 5,196? = 90 (P) · What is the value of the 2 in 7,327? = 20 (L) · What is the value of the 6 in 460? = 60 (S) · What is the value of the 3 in 73,429? = 3000 (H) · What is the value of the 5 in 7,050? = 50 (D) · What is the value of the 3 in 936? = 30 (R) · What is the value of the 9 in 7,984? = 900 (A) · What is the value of the 1 in 210? = 10 (U) · What is the value of the 9 in 39,623? = 9000 (V) · What is the value of the 7 in 799? = 700 (E)

Clue 2 (Skip counting): "THE SUSPECT KICKED WITH THEIR LEFT FOOT"

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 = 36 (T) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 = 26 (S) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, __, 35, 40 = 30 (R) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, __, 18, 20 = 16 (H) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, __, 24, 26 = 22 (O) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, __, 12, 14 = 10 (E) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, __, 20, 22 = 18 (L) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 = 120 (D) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, __, 45, 48 = 42 (C) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, __, 22, 24 = 20 (U) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, __, 42, 45 = 39 (F) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, __, 36, 39 = 33 (W) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, __, 120, 130 = 110 (P) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, __, 90, 100 = 80 (K) · Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 = 8 (I)

Clue 3 (Word problems): "CATNIP TOYS"

Captain Purr found 25 unicorn horns yesterday and 50 more today. How many unicorn horns in all? = 75 (C) · Captain Purr found 27 mermaid flags yesterday and 6 more today. How many mermaid flags in all? = 33 (A) · There were 60 mermaid flags. 17 were used up. How many mermaid flags are left? = 43 (N) · Captain Purr lined up 4 rows of 6 glitter soccer balls. How many glitter soccer balls in all? = 24 (O) · Captain Purr found 51 pixel cleats yesterday and 15 more today. How many pixel cleats in all? = 66 (T) · There were 91 unicorn horns. 23 were used up. How many unicorn horns are left? = 68 (I) · Captain Purr found 14 catnip treats yesterday and 33 more today. How many catnip treats in all? = 47 (P)

Clue 4 (Bar model word problems): "OCEAN BLUE FUR"

There were 57 glitter soccer balls in all. 37 glitter soccer balls were used. How many glitter soccer balls are left? = 20 (O) · There were 44 mermaid flags in all. 4 mermaid flags were used. How many mermaid flags are left? = 40 (E) · Captain Purr shares 124 pixel cleats equally among 4 teams. How many pixel cleats does each team get? = 31 (B) · Captain Purr shares 49 glitter soccer balls equally among 7 teams. How many glitter soccer balls does each team get? = 7 (L) · Captain Purr has 110 glitter soccer balls, packed 10 to a bag. How many bags can be filled? = 11 (C) · Captain Purr has 2 times as many catnip treats as a teammate. The teammate has 8 catnip treats. How many catnip treats does Captain Purr have? = 16 (N) · Captain Purr has 5 times as many pixel cleats as a teammate. The teammate has 9 pixel cleats. How many pixel cleats does Captain Purr have? = 45 (A)

Clue 5 (Missing addends): surviving statement is box 11 → Mary Earps

$7 + \underline{\quad} = 13 = 6$ · $3 + \underline{\quad} = 7 = 4$ · $6 + \underline{\quad} = 18 = 12$ · $10 + \underline{\quad} = 19 = 9$ · $8 + \underline{\quad} = 9 = 1$ · $9 + \underline{\quad} = 16 = 7$ · $6 + \underline{\quad} = 9 = 3$ · $2 + \underline{\quad} = 12 = 10$ · $1 + \underline{\quad} = 3 = 2$ · $8 + \underline{\quad} = 13 = 5$ · $6 + \underline{\quad} = 14 = 8$