



The Case of the Missing Star Ball

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

Detective: _____ Date: _____

The biggest match of the year is tonight under the rainbows of the Sparkle Cup Arena! But someone has stolen the magical Star Ball from the locker room. Without it, Unicorn United cannot play! Follow the clues, solve the sports math, and help find the thief before the stadium lights turn on!

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 Star Thief is _____

Possible suspects

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

NAME	SOCCER POWER	LUCKY GEAR	KICKING STYLE	MANE STYLE	GAME WEAKNESS
Alex Morgan	Glitter Tackle	Glow Headband	Right-footed kick	Blue Star Mane	Slippery Grass
Bukayo Saka	Cloud Slide	Star Cape	Left-footed kick	Blue Star Mane	Slippery Grass
Kylian Mbappe	Cloud Slide	Magic Whistle	Left-footed kick	Blue Star Mane	Slippery Grass
Rainbow Dash	Sparkle Dribble	Glow Headband	Left-footed kick	Pink Glitter Mane	Slippery Grass
Harry Kane	Rainbow Kick	Neon Shin Guards	Left-footed kick	Blue Star Mane	Loud Whistles
Star Striker	Sparkle Dribble	Star Cape	Right-footed kick	Purple Wave Mane	Slippery Grass
Pegasus Pell	Sparkle Dribble	Glow Headband	Left-footed kick	Purple Wave Mane	Slippery Grass
Erling Haaland	Glitter Tackle	Magic Whistle	Left-footed kick	Blue Star Mane	Slippery Grass
Sparkle Hoof	Glitter Tackle	Glow Headband	Left-footed kick	Purple Wave Mane	Loud Whistles
Glitter Boots	Horn Header	Neon Shin Guards	Right-footed kick	Purple Wave Mane	Slippery Grass
Sunny Swift	Sparkle Dribble	Golden Cleats	Left-footed kick	Pink Glitter Mane	Slippery Grass
Son Heung Min	Rainbow Kick	Star Cape	Left-footed kick	Blue Star Mane	Slippery Grass
Lucy Bronze	Sparkle Dribble	Magic Whistle	Left-footed kick	Blue Star Mane	Slippery Grass
Megan Rapinoe	Cloud Slide	Magic Whistle	Right-footed kick	Purple Wave Mane	Slippery Grass
Prancer Kick	Glitter Tackle	Glow Headband	Left-footed kick	Pink Glitter Mane	Loud Whistles
Luna Horn	Cloud Slide	Glow Headband	Left-footed kick	Purple Wave Mane	Slippery Grass
Cristiano Ronaldo	Sparkle Dribble	Golden Cleats	Left-footed kick	Blue Star Mane	Slippery Grass
Wendie Renard	Sparkle Dribble	Neon Shin Guards	Left-footed kick	Purple Wave Mane	Slippery Grass
Sam Kerr	Sparkle Dribble	Glow Headband	Right-footed kick	Purple Wave Mane	Popcorn Smell
Mohamed Salah	Glitter Tackle	Magic Whistle	Left-footed kick	Blue Star Mane	Loud Whistles
Lionel Messi	Rainbow Kick	Magic Whistle	Right-footed kick	Pink Glitter Mane	Loud Whistles

CLUE 1 Place value

The stadium lock needs a secret number code. Let us check the place value of the digits on the locker room door!

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

T			T											T				
6000	500	90	6000	500	50	90	8000	3000	100	90	300	2000	100	6000	70	90	900	7000
		T																
900	300	6000	900	7000	400	900	1000	90										

What is the value of the 6 in 96,497? → **T**

What is the value of the 7 in 6,376? → **W**

What is the value of the 9 in 926? → **A**

What is the value of the 4 in 9,420? → **C**

What is the value of the 3 in 2,397? → **S**

What is the value of the 8 in 78,127? → **F**

What is the value of the 1 in 1,657? → **P**

What is the value of the 1 in 2,107? → **O**

What is the value of the 7 in 27,620? → **R**

What is the value of the 3 in 63,756? → **D**

What is the value of the 5 in 4,520? → **H**

What is the value of the 5 in 7,856? → **I**

What is the value of the 9 in 498? → **E**

What is the value of the 2 in 2,616? → **N**

Scratch space:

CLUE 2 Addition

The team counts the training cones on the field. Adding the red and blue piles reveals a hidden footprint!

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

T																	
3807	7213	3445	7934	4663	3445	2033	8899	9302	4260	2409	4873	4873	9102	2409	4873		

T										T						T
3807	4260	2409	4425	8200	2033	3445	8899	9452	7099	3807	7213	3445	2033	3445	7934	3807

$2056 + 1751 = \square \rightarrow \boxed{\text{T}}$

$2947 + 6355 = \square \rightarrow \boxed{\text{G}}$

$3519 + 5583 = \square \rightarrow \boxed{\text{W}}$

$3705 + 3394 = \square \rightarrow \boxed{\text{N}}$

$3393 + 1480 = \square \rightarrow \boxed{\text{S}}$

$1743 + 2920 = \square \rightarrow \boxed{\text{I}}$

$1600 + 2825 = \square \rightarrow \boxed{\text{M}}$

$6142 + 3310 = \square \rightarrow \boxed{\text{O}}$

$1715 + 1730 = \square \rightarrow \boxed{\text{E}}$

$5616 + 2584 = \square \rightarrow \boxed{\text{P}}$

$900 + 1509 = \square \rightarrow \boxed{\text{A}}$

$4874 + 3060 = \square \rightarrow \boxed{\text{F}}$

$4481 + 2732 = \square \rightarrow \boxed{\text{H}}$

$5984 + 2915 = \square \rightarrow \boxed{\text{D}}$

$810 + 1223 = \square \rightarrow \boxed{\text{L}}$

$2340 + 1920 = \square \rightarrow \boxed{\text{R}}$

Scratch space:

CLUE 3

Subtraction

We have a bucket of shiny soccer balls but some are missing. Subtracting the lost balls shows us where the thief ran.

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

T 3595	8611	3605	T 3595	8611	3795	3605	3021	1111	2184	3795	7478	7478	3605	4081	8049	5389
T 3595	8611	3605	3120	3605	T 3595	7478	3795	T 3595	2396	8611						

$$4682 - 1087 = \boxed{} \rightarrow \boxed{T}$$

$$4456 - 851 = \boxed{} \rightarrow \boxed{E}$$

$$6429 - 3309 = \boxed{} \rightarrow \boxed{W}$$

$$5251 - 1170 = \boxed{} \rightarrow \boxed{D}$$

$$3457 - 1061 = \boxed{} \rightarrow \boxed{C}$$

$$8937 - 888 = \boxed{} \rightarrow \boxed{O}$$

$$4754 - 1733 = \boxed{} \rightarrow \boxed{F}$$

$$5744 - 4633 = \boxed{} \rightarrow \boxed{S}$$

$$7093 - 3298 = \boxed{} \rightarrow \boxed{I}$$

$$5985 - 596 = \boxed{} \rightarrow \boxed{N}$$

$$9265 - 1787 = \boxed{} \rightarrow \boxed{P}$$

$$3213 - 1029 = \boxed{} \rightarrow \boxed{L}$$

$$12356 - 3745 = \boxed{} \rightarrow \boxed{H}$$

Scratch space:

CLUE 4

Multiplication facts (1-12)

The fans are sitting in neat rows of stadium seats. Multiplying the rows by the seats helps us find a dropped clue!

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

B																			
70	18	80	35	14	10	100	30	36	108	30	10	8	44	36	22	35	30	35	
81	8	108	14	35	99	81	10	18											

$10 \times 7 = \square \rightarrow \text{B}$

$1 \times 10 = \square \rightarrow \text{A}$

$11 \times 9 = \square \rightarrow \text{G}$

$10 \times 10 = \square \rightarrow \text{I}$

$2 \times 7 = \square \rightarrow \text{H}$

$4 \times 2 = \square \rightarrow \text{N}$

$8 \times 10 = \square \rightarrow \text{U}$

$5 \times 6 = \square \rightarrow \text{R}$

$9 \times 9 = \square \rightarrow \text{O}$

$12 \times 3 = \square \rightarrow \text{S}$

$9 \times 12 = \square \rightarrow \text{T}$

$11 \times 4 = \square \rightarrow \text{D}$

$9 \times 2 = \square \rightarrow \text{L}$

$2 \times 11 = \square \rightarrow \text{W}$

$7 \times 5 = \square \rightarrow \text{E}$

Scratch space:

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

We must divide the magical sports drinks equally among the players. Sharing them out reveals 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:

$20 \div 10 = \square$

$63 \div 7 = \square$

$36 \div 12 = \square$

$144 \div 12 = \square$

$36 \div 9 = \square$

$48 \div 8 = \square$

$50 \div 5 = \square$

$28 \div 4 = \square$

$60 \div 12 = \square$

$56 \div 7 = \square$

$6 \div 6 = \square$

Step 2 - cross out the sentence with each answer:

1. The villain slides across the field with a glitter tackle, then flashes neon shin guards in the dark.
2. The villain weaves around opponents using sparkle dribble, then stops the game with a magic whistle.
3. The villain slides across the field with a glitter tackle, then stops the game with a magic whistle.
4. The villain zooms past the defenders with a cloud slide, then lights up the field with a glow headband.
5. The villain weaves around opponents using sparkle dribble, then lights up the field with a glow headband.
6. The villain slides across the field with a glitter tackle, then flies into the sky wearing a star cape.
7. The villain leaps high to perform a horn header, then stops the game with a magic whistle.
8. The villain blasts a rainbow kick into the goal, then lights up the field with a glow headband.
9. The villain weaves around opponents using sparkle dribble, then speeds away in golden cleats.
10. The villain weaves around opponents using sparkle dribble, then flashes neon shin guards in the dark.
11. The villain zooms past the defenders with a cloud slide, then stops the game with a magic whistle.
12. The villain leaps high to perform a horn header, then flashes neon shin guards in the dark.

Answer Key

The Case of the Missing Star Ball

Culprit: Kylian Mbappe

Cloud Slide · Magic Whistle · Left-footed kick · Blue Star Mane · Slippery Grass

Trail: Start 21 → Clue 1 18 → Clue 2 13 → Clue 3 9 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE THIEF DOES NOT WEAR A STAR CAPE"

What is the value of the 6 in 96,497? = 6000 (T) · What is the value of the 7 in 6,376? = 70 (W) · What is the value of the 9 in 926? = 900 (A) · What is the value of the 4 in 9,420? = 400 (C) · What is the value of the 3 in 2,397? = 300 (S) · What is the value of the 8 in 78,127? = 8000 (F) · What is the value of the 1 in 1,657? = 1000 (P) · What is the value of the 1 in 2,107? = 100 (O) · What is the value of the 7 in 27,620? = 7000 (R) · What is the value of the 3 in 63,756? = 3000 (D) · What is the value of the 5 in 4,520? = 500 (H) · What is the value of the 5 in 7,856? = 50 (I) · What is the value of the 9 in 498? = 90 (E) · What is the value of the 2 in 2,616? = 2000 (N)

Clue 2 (Addition): "THE FIELD GRASS WAS TRAMPLED ON THE LEFT"

2056 + 1751 = 3807 (T) · 2947 + 6355 = 9302 (G) · 3519 + 5583 = 9102 (W) · 3705 + 3394 = 7099 (N) · 3393 + 1480 = 4873 (S) · 1743 + 2920 = 4663 (I) · 1600 + 2825 = 4425 (M) · 6142 + 3310 = 9452 (O) · 1715 + 1730 = 3445 (E) · 5616 + 2584 = 8200 (P) · 900 + 1509 = 2409 (A) · 4874 + 3060 = 7934 (F) · 4481 + 2732 = 7213 (H) · 5984 + 2915 = 8899 (D) · 810 + 1223 = 2033 (L) · 2340 + 1920 = 4260 (R)

Clue 3 (Subtraction): "THE THIEF SLIPPED ON THE WET PITCH"

4682 - 1087 = 3595 (T) · 4456 - 851 = 3605 (E) · 6429 - 3309 = 3120 (W) · 5251 - 1170 = 4081 (D) · 3457 - 1061 = 2396 (C) · 8937 - 888 = 8049 (O) · 4754 - 1733 = 3021 (F) · 5744 - 4633 = 1111 (S) · 7093 - 3298 = 3795 (I) · 5985 - 596 = 5389 (N) · 9265 - 1787 = 7478 (P) · 3213 - 1029 = 2184 (L) · 12356 - 3745 = 8611 (H)

Clue 4 (Multiplication facts (1-12)): "BLUE HAIR STRANDS WERE ON THE GOAL"

$10 \times 7 = 70$ (B) · $1 \times 10 = 10$ (A) · $11 \times 9 = 99$ (G) · $10 \times 10 = 100$ (I) · $2 \times 7 = 14$ (H) · $4 \times 2 = 8$ (N) · $8 \times 10 = 80$ (U) · $5 \times 6 = 30$ (R) · $9 \times 9 = 81$ (O) · $12 \times 3 = 36$ (S) · $9 \times 12 = 108$ (T) · $11 \times 4 = 44$ (D) · $9 \times 2 = 18$ (L) · $2 \times 11 = 22$ (W) · $7 \times 5 = 35$ (E)

Clue 5 (Division facts (1-12)): surviving statement is box 11 → Kylian Mbappe

$20 \div 10 = 2$ · $63 \div 7 = 9$ · $36 \div 12 = 3$ · $144 \div 12 = 12$ · $36 \div 9 = 4$ · $48 \div 8 = 6$ · $50 \div 5 = 10$ · $28 \div 4 = 7$ · $60 \div 12 = 5$ · $56 \div 7 = 8$ · $6 \div 6 = 1$