



The Case of the Missing Dance Mat

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

Detective: _____ Date: _____

The annual Neon Beats Dance-Off is tonight, but the glowing Master Dance Mat has vanished from the main stage! Without it, nobody can perform their mega-moves. Coach Carly needs your help to track down the suspect and save the show!

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 mat snatcher is _____

Possible suspects

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

NAME	FAVORITE MOVE	DANCE ACCESSORY	STARTING FOOT	HAIR STYLE	FUMBLE FACTOR
Taylor	groove glide	glowing sneakers	left footed start	spiky blue hair	water bottle splash
Billie	electric slide	boombox backpack	right footed start	green neon cap	water bottle splash
Shakira	laser leap	neon headphones	left footed start	spiky blue hair	water bottle splash
Ciara	electric slide	glowing sneakers	left footed start	spiky blue hair	juice box break
Elvis	pixel spin	glitter jacket	right footed start	green neon cap	juice box break
Zendaya	groove glide	glowing sneakers	left footed start	pink ponytail	shoelace tangle
Usher	laser leap	glowing sneakers	left footed start	spiky blue hair	shoelace tangle
Hammer	retro stomp	neon headphones	right footed start	green neon cap	shoelace tangle
Beyonce	laser leap	glowing sneakers	left footed start	green neon cap	juice box break
Ariana	groove glide	boombox backpack	left footed start	spiky blue hair	water bottle splash
Bruno	groove glide	boombox backpack	right footed start	green neon cap	juice box break
JoJo	retro stomp	sparkly headband	left footed start	spiky blue hair	water bottle splash
Maddie	retro stomp	sparkly headband	right footed start	pink ponytail	juice box break
Selena	electric slide	sparkly headband	right footed start	green neon cap	shoelace tangle
Janet	retro stomp	glitter jacket	left footed start	pink ponytail	water bottle splash
Drake	retro stomp	glowing sneakers	left footed start	spiky blue hair	juice box break
Dua	retro stomp	glowing sneakers	left footed start	spiky blue hair	water bottle splash
Paula	laser leap	neon headphones	left footed start	green neon cap	water bottle splash
Lizzo	retro stomp	glowing sneakers	left footed start	spiky blue hair	shoelace tangle
Michael	pixel spin	glitter jacket	right footed start	spiky blue hair	water bottle splash
Justin	electric slide	sparkly headband	right footed start	green neon cap	juice box break

CLUE 1**Multiplication facts (1-12)**

We need to check the dance mat storage lockers. The lockers are arranged in equal rows. Let us multiply the rows to count them all and find our first clue.

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

T							T										
18	55	132	120	15	60	18	9	55	132	80	55	60	120	15	33		
120	81	60	80	44	16	42	55	132	60	49	66	60	15	49			

$6 \times 3 = \square \rightarrow \boxed{\text{T}}$

$3 \times 11 = \square \rightarrow \boxed{\text{O}}$

$11 \times 5 = \square \rightarrow \boxed{\text{H}}$

$7 \times 7 = \square \rightarrow \boxed{\text{D}}$

$1 \times 9 = \square \rightarrow \boxed{\text{C}}$

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

$12 \times 10 = \square \rightarrow \boxed{\text{S}}$

$6 \times 11 = \square \rightarrow \boxed{\text{B}}$

$5 \times 12 = \square \rightarrow \boxed{\text{A}}$

$2 \times 8 = \square \rightarrow \boxed{\text{L}}$

$8 \times 10 = \square \rightarrow \boxed{\text{R}}$

$6 \times 7 = \square \rightarrow \boxed{\text{Y}}$

$3 \times 5 = \square \rightarrow \boxed{\text{N}}$

$11 \times 12 = \square \rightarrow \boxed{\text{E}}$

$4 \times 11 = \square \rightarrow \boxed{\text{K}}$

Scratch space:

CLUE 2 Subtraction

Someone dropped a pile of glowing wristbands. We started with many, but some are gone. Subtract the missing ones to see how many the dancer dropped!

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

T								T					T			T		
3649	6089	8089	2493	7691	7728	7691	3649	2713	3114	7728	3649	8141	3114	3649	8089	4173		
		T		T						T						T		
4079	7691	3649	6089	3649	6089	8089	6165	8089	6037	3649	6037	2713	2713	3649				

$$6896 - 3247 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$9460 - 1732 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$4267 - 94 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$5642 - 1563 = \boxed{} \rightarrow \boxed{\text{W}}$$

$$3926 - 1433 = \boxed{} \rightarrow \boxed{\text{V}}$$

$$9524 - 3435 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$10905 - 4868 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$12337 - 4646 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$9812 - 1723 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$10313 - 2172 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$10933 - 4768 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$5933 - 2819 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$5529 - 2816 = \boxed{} \rightarrow \boxed{\text{O}}$$

Scratch space:

CLUE 3 Addition

Let us tally up the neon stars awarded to the dance groups. Add the star stickers from both teams to unlock the next piece of evidence.

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

T															
4772	7992	6918	3230	9793	6918	5865	6688	4657	3400	5865	9793	3623	6918	9154	
												T			
3230	4330	7692	2693	2693	6918	3400	3080	9793	5865	4990	5865	4772	6918	9154	
3230	2693	4330	5865	3230	7992										

$2781 + 1991 = \square \rightarrow$ T	$1827 + 1796 = \square \rightarrow$ C	$4597 + 4557 = \square \rightarrow$ R
$1377 + 2953 = \square \rightarrow$ L	$1200 + 1493 = \square \rightarrow$ P	$2307 + 1093 = \square \rightarrow$ D
$3924 + 3768 = \square \rightarrow$ I	$1903 + 1177 = \square \rightarrow$ O	$2296 + 3569 = \square \rightarrow$ A
$3644 + 3274 = \square \rightarrow$ E	$3790 + 4202 = \square \rightarrow$ H	$3241 + 1416 = \square \rightarrow$ Y
$3414 + 3274 = \square \rightarrow$ K	$1681 + 3309 = \square \rightarrow$ W	$3175 + 6618 = \square \rightarrow$ N
$2092 + 1138 = \square \rightarrow$ S		

Scratch space:

CLUE 4 Rounding

The electronic step-counter screen is fuzzy and only shows a rounded number. Round the total steps to the nearest ten to decode this clue.

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

T						T				T									
3700	90	1300	200	1300	3700	1300	3000	3700	1700	70	1300	2300	900	4300	9000	200			
50	370	1700	500	700	2900	230	4300	1300	90	290	1700	7000							

Round 3,667 to the nearest hundred → **T**

Round 289 to the nearest ten → **A**

Round 689 to the nearest hundred → **Y**

Round 6,750 to the nearest thousand → **R**

Round 88 to the nearest ten → **H**

Round 1,295 to the nearest hundred → **E**

Round 230 to the nearest ten → **L**

Round 3,448 to the nearest thousand → **C**

Round 889 to the nearest hundred → **O**

Round 9,084 to the nearest thousand → **N**

Round 52 to the nearest ten → **S**

Round 240 to the nearest hundred → **D**

Round 494 to the nearest hundred → **K**

Round 2,305 to the nearest hundred → **F**

Round 374 to the nearest ten → **P**

Round 2,937 to the nearest hundred → **B**

Round 1,659 to the nearest hundred → **I**

Round 4,258 to the nearest hundred → **U**

Round 73 to the nearest ten → **V**

Scratch space:

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

We have a big pack of practice snacks to share equally among the hip-hop crew. Divide the snacks to see who gets what and find the 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:

$12 \div 1 = \boxed{}$

$30 \div 10 = \boxed{}$

$32 \div 4 = \boxed{}$

$88 \div 8 = \boxed{}$

$40 \div 10 = \boxed{}$

$99 \div 11 = \boxed{}$

$9 \div 9 = \boxed{}$

$30 \div 6 = \boxed{}$

$2 \div 1 = \boxed{}$

$70 \div 10 = \boxed{}$

$60 \div 6 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain unplugs the giant speakers, then leaps through the window.
2. The villain swipes the power cables, then zips away on a scooter.
3. The villain sneaks onto the glowing dance floor, then scampers down the hallway.
4. The villain creeps into the practice room, then zips away on a scooter.
5. The villain sneaks onto the glowing dance floor, then darts out the back exit.
6. The villain unplugs the giant speakers, then zips away on a scooter.
7. The villain unplugs the giant speakers, then scampers down the hallway.
8. The villain swipes the power cables, then darts out the back exit.
9. The villain sneaks onto the glowing dance floor, then leaps through the window.
10. The villain sneaks onto the glowing dance floor, then dances out into the street.
11. The villain hides behind the DJ booth, then darts out the back exit.
12. The villain sneaks onto the glowing dance floor, then zips away on a scooter.

Answer Key

The Case of the Missing Dance Mat

Culprit: Dua

retro stomp · glowing sneakers · left footed start · spiky blue hair · water bottle splash

Trail: Start 21 → Clue 1 17 → Clue 2 12 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE SNATCHER HAS NO SPARKLY HEADBAND"

$6 \times 3 = 18$ (T) · $3 \times 11 = 33$ (O) · $11 \times 5 = 55$ (H) · $7 \times 7 = 49$ (D) · $1 \times 9 = 9$ (C) · $9 \times 9 = 81$ (P) · $12 \times 10 = 120$ (S) · $6 \times 11 = 66$ (B) · $5 \times 12 = 60$ (A) · $2 \times 8 = 16$ (L) · $8 \times 10 = 80$ (R) · $6 \times 7 = 42$ (Y) · $3 \times 5 = 15$ (N) · $11 \times 12 = 132$ (E) · $4 \times 11 = 44$ (K)

Clue 2 (Subtraction): "THE VISITOR STARTED WITH THE LEFT FOOT"

$6896 - 3247 = 3649$ (T) · $9460 - 1732 = 7728$ (S) · $4267 - 94 = 4173$ (D) · $5642 - 1563 = 4079$ (W) · $3926 - 1433 = 2493$ (V) · $9524 - 3435 = 6089$ (H) · $10905 - 4868 = 6037$ (F) · $12337 - 4646 = 7691$ (I) · $9812 - 1723 = 8089$ (E) · $10313 - 2172 = 8141$ (A) · $10933 - 4768 = 6165$ (L) · $5933 - 2819 = 3114$ (R) · $5529 - 2816 = 2713$ (O)

Clue 3 (Addition): "THE SNEAKY DANCER SLIPPED ON A WATER SPLASH"

$2781 + 1991 = 4772$ (T) · $1827 + 1796 = 3623$ (C) · $4597 + 4557 = 9154$ (R) · $1377 + 2953 = 4330$ (L) · $1200 + 1493 = 2693$ (P) · $2307 + 1093 = 3400$ (D) · $3924 + 3768 = 7692$ (I) · $1903 + 1177 = 3080$ (O) · $2296 + 3569 = 5865$ (A) · $3644 + 3274 = 6918$ (E) · $3790 + 4202 = 7992$ (H) · $3241 + 1416 = 4657$ (Y) · $3414 + 3274 = 6688$ (K) · $1681 + 3309 = 4990$ (W) · $3175 + 6618 = 9793$ (N) · $2092 + 1138 = 3230$ (S)

Clue 4 (Rounding): "THE DETECTIVE FOUND SPIKY BLUE HAIR"

Round 3,667 to the nearest hundred = 3700 (T) · Round 289 to the nearest ten = 290 (A) · Round 689 to the nearest hundred = 700 (Y) · Round 6,750 to the nearest thousand = 7000 (R) · Round 88 to the nearest ten = 90 (H) · Round 1,295 to the nearest hundred = 1300 (E) · Round 230 to the nearest ten = 230 (L) · Round 3,448 to the nearest thousand = 3000 (C) · Round 889 to the nearest hundred = 900 (O) · Round 9,084 to the nearest thousand = 9000 (N) · Round 52 to the nearest ten = 50 (S) · Round 240 to the nearest hundred = 200 (D) · Round 494 to the nearest hundred = 500 (K) · Round 2,305 to the nearest hundred = 2300 (F) · Round 374 to the nearest ten = 370 (P) · Round 2,937 to the nearest hundred = 2900 (B) · Round 1,659 to the nearest hundred = 1700 (I) · Round 4,258 to the nearest hundred = 4300 (U) · Round 73 to the nearest ten = 70 (V)

Clue 5 (Division facts (1-12)): surviving statement is box 6 → Dua

$12 \div 1 = 12$ · $30 \div 10 = 3$ · $32 \div 4 = 8$ · $88 \div 8 = 11$ · $40 \div 10 = 4$ · $99 \div 11 = 9$ · $9 \div 9 = 1$ · $30 \div 6 = 5$ · $2 \div 1 = 2$ · $70 \div 10 = 7$ · $60 \div 6 = 10$