

The Great Lego Mix-Up

Grade 1 math · Addition, Subtraction, Multi-step word problems, Place value, Missing addends · Reading level grades 1-2

Detective: _____ Date: _____

Oh no! Someone scrambled the perfectly sorted Lego bins at the Brick Academy. The Master Builder needs your help to find the Messy Mixer who mixed the plates with the bricks!

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 Messy Mixer is _____

Possible suspects

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

NAME	FAVORITE BRICK	SORTING STYLE	BUILDER HAND	CAP COLOR	FAVORITE SNACK
Zack Zinc	green baseplate	sorting by height	right handed build	neon yellow cap	sweet gummy bears
Gaby Gray	one by two blue plate	sorting by color	right handed build	dark red cap	cheesy popcorn
Gavin Gear	black wheel axle	sorting by weight	right handed build	neon yellow cap	apple slices
Leo Lego	yellow roof slope	sorting by type	left handed build	bright blue cap	sweet gummy bears
Fiona Flat	two by four red brick	sorting by weight	right handed build	bright blue cap	apple slices
Danny Dot	two by four red brick	sorting by type	right handed build	bright blue cap	apple slices
Mia Mix	black wheel axle	sorting by weight	right handed build	bright blue cap	apple slices
Zoe Zone	yellow roof slope	sorting by height	right handed build	bright blue cap	apple slices
Cody Cone	green baseplate	sorting by size	right handed build	bright blue cap	apple slices
Bella Block	green baseplate	sorting by color	left handed build	neon yellow cap	cheesy popcorn
Owen Orange	two by four red brick	sorting by type	left handed build	bright blue cap	apple slices
Eli Edge	yellow roof slope	sorting by weight	left handed build	bright blue cap	apple slices
Andy Angle	green baseplate	sorting by type	right handed build	bright blue cap	sweet gummy bears
Toby Tile	black wheel axle	sorting by height	right handed build	bright blue cap	cheesy popcorn
Peter Peg	green baseplate	sorting by type	right handed build	neon yellow cap	apple slices
Penny Plate	green baseplate	sorting by height	right handed build	dark red cap	sweet gummy bears
Benny Blue	yellow roof slope	sorting by weight	left handed build	dark red cap	sweet gummy bears
Daisy Dome	black wheel axle	sorting by size	left handed build	dark red cap	sweet gummy bears
Tina Tiny	yellow roof slope	sorting by weight	left handed build	bright blue cap	cheesy popcorn
Billy Brick	yellow roof slope	sorting by color	right handed build	neon yellow cap	cheesy popcorn
Carla Clip	black wheel axle	sorting by height	right handed build	neon yellow cap	apple slices

CLUE 1 Addition

The Lego Team counts the red bricks. We add two small piles together to get a total. This tells us about their sorting style.

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

T								T				T		
4	2	11	16	14	6	9	6	4	20	6	13	4	3	16
					T									
2	11	12	19	2	4									

$1 + 3 = \square \rightarrow \text{T}$	$1 + 1 = \square \rightarrow \text{H}$	$2 + 1 = \square \rightarrow \text{B}$	$8 + 3 = \square \rightarrow \text{E}$
$8 + 8 = \square \rightarrow \text{Y}$	$8 + 12 = \square \rightarrow \text{S}$	$3 + 3 = \square \rightarrow \text{O}$	
$5 + 14 = \square \rightarrow \text{G}$	$4 + 5 = \square \rightarrow \text{N}$	$6 + 8 = \square \rightarrow \text{D}$	$4 + 9 = \square \rightarrow \text{R}$
$5 + 7 = \square \rightarrow \text{I}$			

Scratch space:

CLUE 2 Subtraction

We had a big box of blue plates but some went missing. We subtract the leftover plates to find out how many were taken.

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

R												R			
12	2	5	7	3	7	15	1	6	16	6	11	12	2	13	4

		R							
8	15	12	4	10	18	9	19	1	6

$19 - 7 = \square \rightarrow$ R	$14 - 7 = \square \rightarrow$ H	$16 - 5 = \square \rightarrow$ B	$8 - 6 = \square \rightarrow$ I
$14 - 1 = \square \rightarrow$ C	$19 - 4 = \square \rightarrow$ A	$15 - 6 = \square \rightarrow$ O	
$17 - 1 = \square \rightarrow$ E	$7 - 2 = \square \rightarrow$ G	$7 - 3 = \square \rightarrow$ K	$7 - 1 = \square \rightarrow$ D
$20 - 2 = \square \rightarrow$ F	$20 - 1 = \square \rightarrow$ U	$6 - 5 = \square \rightarrow$ N	$18 - 8 = \square \rightarrow$ S
$11 - 8 = \square \rightarrow$ T	$16 - 8 = \square \rightarrow$ M		

Scratch space:

CLUE 3

Multi-step word problems

We find some green bricks. First we add the piles on the table. Then we take away the broken ones. This helps us find a snack clue.

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

Someone scared the villain off with

A										
17	15	15	19	34	31	19	26	24	34	31

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There were 159 red bricks in all. 6 red bricks were set aside. The rest were shared equally among 9 The Sorting Squad. How many red bricks did each get?

Answer: → **A**

Coach Block collected 68 blue plates in the morning and 34 blue plates in the afternoon, then split them equally among 3 The Sorting Squad. How many blue plates did each get?

Answer: → **E**

There were 187 brick separators in all. 16 brick separators were set aside. The rest were shared equally among 9 The Sorting Squad. How many brick separators did each get?

Answer: → **L**

There were 157 yellow studs in all. 22 yellow studs were set aside. The rest were shared equally among 9 The Sorting Squad. How many yellow studs did each get?

Answer: → **P**

Coach Block filled 6 boxes with 4 blue plates each, then found 7 more blue plates. How many blue plates are there in all?

Answer: → **S**

There were 145 red bricks in all. 25 red bricks were set aside. The rest were shared equally among 5 The Sorting Squad. How many red bricks did each get?

Answer: → **C**

Coach Block collected 76 brick separators in the morning and 28 brick separators in the afternoon, then split them equally among 4 The Sorting Squad. How many brick separators did each get?

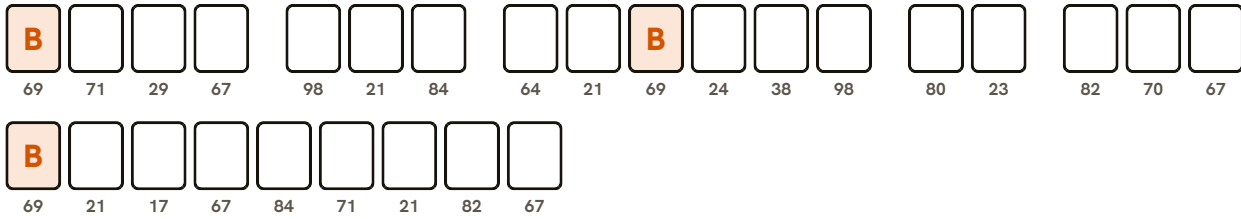
Answer: → **I**

Scratch space:

CLUE 4 Place value

Look at the stacks of ten bricks and single ones. We count the tens and ones to read the secret code on the cap.

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



What number has 6 tens and 9 ones? → **B**

What number has 6 tens and 7 ones? → **E**

What number has 3 tens and 8 ones? → **I**

What number has 6 tens and 4 ones? → **F**

What number has 7 tens and 1 one? → **L**

What number has 2 tens and 9 ones? → **U**

What number has 8 tens and 4 ones? → **P**

What number has 9 tens and 8 ones? → **C**

What number has 8 tens and 0 ones? → **O**

What number has 2 tens and 3 ones? → **N**

What number has 2 tens and 4 ones? → **R**

What number has 2 tens and 1 one? → **A**

What number has 8 tens and 2 ones? → **T**

What number has 1 ten and 7 ones? → **S**

What number has 7 tens and 0 ones? → **H**

Scratch space:

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

The bin needs ten yellow blocks. We only have six. We find how many more we need to solve the last puzzle.

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:

$5 + \underline{\quad} = 14$

$10 + \underline{\quad} = 16$

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

$5 + \underline{\quad} = 7$

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

$8 + \underline{\quad} = 20$

$5 + \underline{\quad} = 8$

$3 + \underline{\quad} = 4$

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

$8 + \underline{\quad} = 19$

$9 + \underline{\quad} = 13$

Step 2 - cross out the sentence with each answer:

1. The villain hides the yellow bricks, then messes up the color wheel.
2. The villain mixes the plates and bricks, then runs away with the brick separator.
3. The villain swaps the green plates, then scatters the baseplates.
4. The villain dumps the blue bin, then messes up the color wheel.
5. The villain scrambles the red bricks, then scatters the baseplates.
6. The villain scrambles the red bricks, then runs away with the brick separator.
7. The villain dumps the blue bin, then scatters the baseplates.
8. The villain dumps the blue bin, then knocks over the sorted bins.
9. The villain hides the yellow bricks, then runs away with the brick separator.
10. The villain mixes the plates and bricks, then scatters the baseplates.
11. The villain mixes the plates and bricks, then leaves a messy pile.
12. The villain swaps the green plates, then leaves a messy pile.

Answer Key

The Great Lego Mix-Up

Culprit: Cody Cone

green baseplate · sorting by size · right handed build · bright blue cap · apple slices

Trail: Start 21 → Clue 1 16 → Clue 2 9 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THEY DO NOT SORT BY HEIGHT"

$1 + 3 = 4$ (T) · $1 + 1 = 2$ (H) · $2 + 1 = 3$ (B) · $8 + 3 = 11$ (E) · $8 + 8 = 16$ (Y) · $8 + 12 = 20$ (S) · $3 + 3 = 6$ (O) · $5 + 14 = 19$ (G) · $4 + 5 = 9$ (N) · $6 + 8 = 14$ (D) · $4 + 9 = 13$ (R) · $5 + 7 = 12$ (I)

Clue 2 (Subtraction): "RIGHT HANDED BRICK MARKS FOUND"

$19 - 7 = 12$ (R) · $14 - 7 = 7$ (H) · $16 - 5 = 11$ (B) · $8 - 6 = 2$ (I) · $14 - 1 = 13$ (C) · $19 - 4 = 15$ (A) · $15 - 6 = 9$ (O) · $17 - 1 = 16$ (E) · $7 - 2 = 5$ (G) · $7 - 3 = 4$ (K) · $7 - 1 = 6$ (D) · $20 - 2 = 18$ (F) · $20 - 1 = 19$ (U) · $6 - 5 = 1$ (N) · $18 - 8 = 10$ (S) · $11 - 8 = 3$ (T) · $16 - 8 = 8$ (M)

Clue 3 (Multi-step word problems): "APPLE SLICES"

There were 159 red bricks in all. 6 red bricks were set aside. The rest were shared equally among 9 The Sorting Squad. How many red bricks did each get? = 17 (A) · Coach Block collected 68 blue plates in the morning and 34 blue plates in the afternoon, then split them equally among 3 The Sorting Squad. How many blue plates did each get? = 34 (E) · There were 187 brick separators in all. 16 brick separators were set aside. The rest were shared equally among 9 The Sorting Squad. How many brick separators did each get? = 19 (L) · There were 157 yellow studs in all. 22 yellow studs were set aside. The rest were shared equally among 9 The Sorting Squad. How many yellow studs did each get? = 15 (P) · Coach Block filled 6 boxes with 4 blue plates each, then found 7 more blue plates. How many blue plates are there in all? = 31 (S) · There were 145 red bricks in all. 25 red bricks were set aside. The rest were shared equally among 5 The Sorting Squad. How many red bricks did each get? = 24 (C) · Coach Block collected 76 brick separators in the morning and 28 brick separators in the afternoon, then split them equally among 4 The Sorting Squad. How many brick separators did each get? = 26 (I)

Clue 4 (Place value): "BLUE CAP FABRIC ON THE BASEPLATE"

What number has 6 tens and 9 ones? = 69 (B) · What number has 6 tens and 7 ones? = 67 (E) · What number has 3 tens and 8 ones? = 38 (I) · What number has 6 tens and 4 ones? = 64 (F) · What number has 7 tens and 1 one? = 71 (L) · What number has 2 tens and 9 ones? = 29 (U) · What number has 8 tens and 4 ones? = 84 (P) · What number has 9 tens and 8 ones? = 98 (C) · What number has 8 tens and 0 ones? = 80 (O) · What number has 2 tens and 3 ones? = 23 (N) · What number has 2 tens and 4 ones? = 24 (R) · What number has 2 tens and 1 one? = 21 (A) · What number has 8 tens and 2 ones? = 82 (T) · What number has 1 ten and 7 ones? = 17 (S) · What number has 7 tens and 0 ones? = 70 (H)

Clue 5 (Missing addends): surviving statement is box 8 → Cody Cone

$5 + \underline{\quad} = 14 = 9$ · $10 + \underline{\quad} = 16 = 6$ · $8 + \underline{\quad} = 13 = 5$ · $5 + \underline{\quad} = 7 = 2$ · $9 + \underline{\quad} = 16 = 7$ · $8 + \underline{\quad} = 20 = 12$ · $5 + \underline{\quad} = 8 = 3$ · $3 + \underline{\quad} = 4 = 1$ · $2 + \underline{\quad} = 12 = 10$ · $8 + \underline{\quad} = 19 = 11$ · $9 + \underline{\quad} = 13 = 4$