



The Case of the Missing Number Twos

Grade 4 math · Addition, Multi-step word problems, Subtraction, Multiplication, Division · Reading level grades 3-4

Detective: _____ Date: _____

Someone has emptied all the supply boxes right before the big spelling test! Every single yellow number two pencil is gone. Only yellow sawdust is left behind. We need to find the Pencil Snatcher before the test bell rings!

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 Pencil Snatcher is _____

Possible suspects

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

NAME	STEALING TOOL	SECRET HIDING SPOT	WRITING HAND	DROPPED ACCESSORY	FOIL ITEM
Leo	velcro sneakers	sneaker box	left handed writer	green headband	metal pencil sharpeners
Fay	grabber claw	hollow binder	right handed writer	blue baseball cap	smelly cherry erasers
Eva	grabber claw	sneaker box	right handed writer	green headband	smelly cherry erasers
Mia	grabber claw	secret locker	right handed writer	green headband	neon pencil grips
Ben	magnetic ruler	backpack pocket	left handed writer	red hair clip	neon pencil grips
Ted	magnetic ruler	sneaker box	right handed writer	red hair clip	metal pencil sharpeners
Jan	velcro sneakers	hollow binder	right handed writer	red hair clip	neon pencil grips
Ava	pocket slingshot	secret locker	right handed writer	blue baseball cap	smelly cherry erasers
Eli	pocket slingshot	backpack pocket	right handed writer	blue baseball cap	smelly cherry erasers
Gus	pocket slingshot	pencil pouch	right handed writer	red hair clip	neon pencil grips
Val	pocket slingshot	backpack pocket	right handed writer	red hair clip	smelly cherry erasers
Jax	grabber claw	pencil pouch	right handed writer	green headband	smelly cherry erasers
Roy	sticky tape glove	pencil pouch	right handed writer	red hair clip	smelly cherry erasers
Kim	sticky tape glove	secret locker	right handed writer	red hair clip	smelly cherry erasers
Dan	pocket slingshot	pencil pouch	left handed writer	red hair clip	smelly cherry erasers
Meg	sticky tape glove	backpack pocket	right handed writer	green headband	metal pencil sharpeners
Ned	velcro sneakers	pencil pouch	left handed writer	blue baseball cap	metal pencil sharpeners
Zoe	magnetic ruler	hollow binder	right handed writer	red hair clip	smelly cherry erasers
Max	velcro sneakers	hollow binder	left handed writer	red hair clip	metal pencil sharpeners
Ian	magnetic ruler	pencil pouch	right handed writer	red hair clip	smelly cherry erasers
Joy	velcro sneakers	sneaker box	left handed writer	red hair clip	neon pencil grips

CLUE 1 Addition

We count the empty pencil boxes. Two boxes had twelve pencils each, but five were dropped. We do some quick steps to find how many are missing, which reveals a clue.

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

T																			
6791	6073	6222	3826	7811	6498	6791	4034	6073	6222	8651	2900	2981	6222	3826	7811	2981	6791		

5369	3826	6222	6498	3826	6222	4034	8651	6222	6791	4239	2981	4034	9098	6222	8651		

$4649 + 2142 = \square \rightarrow \boxed{\text{T}}$	$2564 + 1262 = \square \rightarrow \boxed{\text{S}}$	$2608 + 1426 = \square \rightarrow \boxed{\text{C}}$
$2033 + 948 = \square \rightarrow \boxed{\text{O}}$	$3574 + 4237 = \square \rightarrow \boxed{\text{N}}$	$2761 + 2608 = \square \rightarrow \boxed{\text{U}}$
$1173 + 1727 = \square \rightarrow \boxed{\text{D}}$	$3622 + 2451 = \square \rightarrow \boxed{\text{H}}$	$3871 + 2627 = \square \rightarrow \boxed{\text{A}}$
$2579 + 1660 = \square \rightarrow \boxed{\text{L}}$	$6192 + 2906 = \square \rightarrow \boxed{\text{K}}$	$3200 + 3022 = \square \rightarrow \boxed{\text{E}}$
$5330 + 3321 = \square \rightarrow \boxed{\text{R}}$		

Scratch space:

CLUE 2

Multi-step word problems

The detective finds two piles of yellow shavings on the floor. Adding the shavings from both piles gives us a magic number that opens a secret clue container.

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

A witness saw the villain was

R									D	E	D	W	R			E	R
67	71	54	14	82	14	40	77					67	71	82		67	

Hall monitor collected 23 sharpeners in the morning and 245 sharpeners in the afternoon, then split them equally among 4 pencil patrol. How many sharpeners did each get?

Answer: → **R**

Hall monitor earned 2 erasers in each of 6 rounds, plus 15 bonus erasers. Then 13 erasers were lost. How many erasers are left?

Answer: → **H**

There were 178 crayons in all. 3 pencil patrol used 8 crayons each. The other 2 pencil patrol shared the rest equally. How many crayons did each of the other pencil patrol get?

Answer: → **N**

Hall monitor collected 25 notepads in the morning and 139 notepads in the afternoon, then split them equally among 2 pencil patrol. How many notepads did each get?

Answer: → **T**

Hall monitor filled 6 boxes with 3 erasers each, then found 36 more erasers. How many erasers are there in all?

Answer: → **G**

Hall monitor collected 352 crayons in the morning and 3 crayons in the afternoon, then split them equally among 5 pencil patrol. How many crayons did each get?

Answer: → **I**

There were 238 crayons in all. 3 pencil patrol used 26 crayons each. The other 4 pencil patrol shared the rest equally. How many crayons did each of the other pencil patrol get?

Answer: → **A**

Scratch space:

CLUE 3

Subtraction

There were fifty erasers this morning but now there are far fewer. We subtract the leftover erasers to see how many were taken, pointing us to a new hint.

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

T												T					
7273	2054	8888	2868	7949	6515	8070	7949	2868	5767	5767	7273	5852	4821	5694	5852	2856	

5767	3415	8888	6515	6515	2868	1674	2054	8888	2856	2856	2868	8888	2856	7949	5767	8888	2856

$10517 - 3244 = \square \rightarrow \text{[T]}$

$6627 - 3771 = \square \rightarrow \text{[R]}$

$3593 - 178 = \square \rightarrow \text{[M]}$

$12372 - 4423 = \square \rightarrow \text{[A]}$

$3945 - 1077 = \square \rightarrow \text{[Y]}$

$3841 - 1787 = \square \rightarrow \text{[H]}$

$9420 - 3726 = \square \rightarrow \text{[F]}$

$9370 - 1300 = \square \rightarrow \text{[W]}$

$1712 - 38 = \square \rightarrow \text{[C]}$

$5170 - 349 = \square \rightarrow \text{[P]}$

$13347 - 4459 = \square \rightarrow \text{[E]}$

$9082 - 3315 = \square \rightarrow \text{[S]}$

$8115 - 2263 = \square \rightarrow \text{[O]}$

$7036 - 521 = \square \rightarrow \text{[L]}$

Scratch space:

CLUE 4
Multiplication facts (1-12)

We look at the desks. They are arranged in four neat rows with six desks in each row. Multiplying these rows helps us map out where the thief dropped a clue.

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

W															
35	108	27	32	11	20	132	84	15	33	77	20	9	70	108	132
33	84	77	70	49	40	77	64	77	20	24	33	108	132	11	15

$5 \times 7 = \square \rightarrow$ W	$12 \times 7 = \square \rightarrow$ A	$1 \times 11 = \square \rightarrow$ U	
$10 \times 2 = \square \rightarrow$ N	$3 \times 11 = \square \rightarrow$ H	$11 \times 12 = \square \rightarrow$ D	
$7 \times 7 = \square \rightarrow$ C	$8 \times 8 = \square \rightarrow$ P	$12 \times 9 = \square \rightarrow$ E	
$11 \times 7 = \square \rightarrow$ I	$12 \times 2 = \square \rightarrow$ T	$5 \times 8 = \square \rightarrow$ L	
$7 \times 10 = \square \rightarrow$ R	$4 \times 8 = \square \rightarrow$ O	$9 \times 3 = \square \rightarrow$ F	$3 \times 3 = \square \rightarrow$ Y
$3 \times 5 = \square \rightarrow$ S			

Scratch space:

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

The teacher shares thirty-six cool sticker sheets equally among nine students. Dividing them up perfectly shows us the final piece of evidence.

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:

$14 \div 2 = \boxed{}$

$30 \div 5 = \boxed{}$

$16 \div 4 = \boxed{}$

$30 \div 10 = \boxed{}$

$40 \div 5 = \boxed{}$

$2 \div 2 = \boxed{}$

$22 \div 2 = \boxed{}$

$54 \div 6 = \boxed{}$

$55 \div 11 = \boxed{}$

$108 \div 9 = \boxed{}$

$2 \div 1 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain creeps past the teacher desk, then swipes the box of graphite.
2. The villain unzips the supply bags, then stuffs their pockets with lead.
3. The villain creeps past the teacher desk, then scoops up the fresh yellow pencils.
4. The villain unzips the supply bags, then swipes the box of graphite.
5. The villain creeps past the teacher desk, then stuffs their pockets with lead.
6. The villain tiptoes down the hallway, then scoops up the fresh yellow pencils.
7. The villain sneaks into the classroom, then swipes the box of graphite.
8. The villain tiptoes down the hallway, then swipes the box of graphite.
9. The villain tiptoes down the hallway, then stuffs their pockets with lead.
10. The villain sneaks into the classroom, then grabs every single wooden pencil.
11. The villain climbs through the window, then scoops up the fresh yellow pencils.
12. The villain unzips the supply bags, then scoops up the fresh yellow pencils.

Answer Key

The Case of the Missing Number Twos

Culprit: Zoe

magnetic ruler · hollow binder · right handed writer · red hair clip · smelly cherry erasers

Trail: Start 21 → Clue 1 18 → Clue 2 12 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE SNATCHER DOES NOT USE A SECRET LOCKER"

$4649 + 2142 = 6791$ (T) · $2564 + 1262 = 3826$ (S) · $2608 + 1426 = 4034$ (C) · $2033 + 948 = 2981$ (O) · $3574 + 4237 = 7811$ (N) · $2761 + 2608 = 5369$ (U) · $1173 + 1727 = 2900$ (D) · $3622 + 2451 = 6073$ (H) · $3871 + 2627 = 6498$ (A) · $2579 + 1660 = 4239$ (L) · $6192 + 2906 = 9098$ (K) · $3200 + 3022 = 6222$ (E) · $5330 + 3321 = 8651$ (R)

Clue 2 (Multi-step word problems): "RIGHT HANDED WRITER"

Hall monitor collected 23 sharpeners in the morning and 245 sharpeners in the afternoon, then split them equally among 4 pencil patrol. How many sharpeners did each get? = 67 (R) · Hall monitor earned 2 erasers in each of 6 rounds, plus 15 bonus erasers. Then 13 erasers were lost. How many erasers are left? = 14 (H) · There were 178 crayons in all. 3 pencil patrol used 8 crayons each. The other 2 pencil patrol shared the rest equally. How many crayons did each of the other pencil patrol get? = 77 (N) · Hall monitor collected 25 notepads in the morning and 139 notepads in the afternoon, then split them equally among 2 pencil patrol. How many notepads did each get? = 82 (T) · Hall monitor filled 6 boxes with 3 erasers each, then found 36 more erasers. How many erasers are there in all? = 54 (G) · Hall monitor collected 352 crayons in the morning and 3 crayons in the afternoon, then split them equally among 5 pencil patrol. How many crayons did each get? = 71 (I) · There were 238 crayons in all. 3 pencil patrol used 26 crayons each. The other 4 pencil patrol shared the rest equally. How many crayons did each of the other pencil patrol get? = 40 (A)

Clue 3 (Subtraction): "THEY ALWAYS STOP FOR SMELLY CHERRY ERASERS"

$10517 - 3244 = 7273$ (T) · $6627 - 3771 = 2856$ (R) · $3593 - 178 = 3415$ (M) · $12372 - 4423 = 7949$ (A) · $3945 - 1077 = 2868$ (Y) · $3841 - 1787 = 2054$ (H) · $9420 - 3726 = 5694$ (F) · $9370 - 1300 = 8070$ (W) · $1712 - 38 = 1674$ (C) · $5170 - 349 = 4821$ (P) · $13347 - 4459 = 8888$ (E) · $9082 - 3315 = 5767$ (S) · $8115 - 2263 = 5852$ (O) · $7036 - 521 = 6515$ (L)

Clue 4 (Multiplication facts (1-12)): "WE FOUND A SHINY RED HAIR CLIP IN THE DUST"

$5 \times 7 = 35$ (W) · $12 \times 7 = 84$ (A) · $1 \times 11 = 11$ (U) · $10 \times 2 = 20$ (N) · $3 \times 11 = 33$ (H) · $11 \times 12 = 132$ (D) · $7 \times 7 = 49$ (C) · $8 \times 8 = 64$ (P) · $12 \times 9 = 108$ (E) · $11 \times 7 = 77$ (I) · $12 \times 2 = 24$ (T) · $5 \times 8 = 40$ (L) · $7 \times 10 = 70$ (R) · $4 \times 8 = 32$ (O) · $9 \times 3 = 27$ (F) · $3 \times 3 = 9$ (Y) · $3 \times 5 = 15$ (S)

Clue 5 (Division facts (1-12)): surviving statement is box 10 → Zoe

$14 \div 2 = 7$ · $30 \div 5 = 6$ · $16 \div 4 = 4$ · $30 \div 10 = 3$ · $40 \div 5 = 8$ · $2 \div 2 = 1$ · $22 \div 2 = 11$ · $54 \div 6 = 9$ · $55 \div 11 = 5$ · $108 \div 9 = 12$ · $2 \div 1 = 2$