



The Great Jimothy Toy Factory Mystery

Grade 4 math · Subtraction, Multiplication, Word problems, Multi-step word problems, Missing addends · Reading level
grades 3-4

Detective: _____ Date: _____

Someone snuck into Jimothy's Gizmo Factory and swapped the secret Golden Gear with a fake potato! Work through the clues to track down the culprit.

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 Toy Snatcher is _____

Possible suspects

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

NAME	GADGET	DISGUISE	STANCE	HAT COLOR	DISTRACTION
Silly Sam	Grapple Hook	Moustache Mask	Right Handed	Red Helmet	Squeaky Toys
Drill Dan	Rocket Skates	Neon Cape	Right Handed	Red Helmet	Silly Songs
Welder Wendy	Grapple Hook	Glitter Cloak	Right Handed	Red Helmet	Squeaky Toys
Gasket Gail	Bubble Cannon	Neon Cape	Left Handed	Red Helmet	Squeaky Toys
Solder Sid	Grapple Hook	Neon Cape	Left Handed	Red Helmet	Bright Lights
Riveter Rosa	Bubble Cannon	Neon Cape	Right Handed	Green Beanie	Squeaky Toys
Valve Vance	Bubble Cannon	Moustache Mask	Right Handed	Red Helmet	Squeaky Toys
Screwy Sue	Grapple Hook	Giant Box	Left Handed	Blue Cap	Bright Lights
Lathe Lou	Rocket Skates	Robot Suit	Left Handed	Red Helmet	Squeaky Toys
Tinker Tim	Rocket Skates	Glitter Cloak	Left Handed	Green Beanie	Bright Lights
Sparky Stan	Grapple Hook	Neon Cape	Right Handed	Red Helmet	Silly Songs
Bolt Ben	Laser Yo Yo	Robot Suit	Right Handed	Red Helmet	Squeaky Toys
Inventor Ike	Grapple Hook	Moustache Mask	Left Handed	Green Beanie	Silly Songs
Gauge Gina	Magnet Glove	Robot Suit	Left Handed	Blue Cap	Bright Lights
Baker Bob	Laser Yo Yo	Neon Cape	Right Handed	Red Helmet	Bright Lights
Robo Rita	Laser Yo Yo	Moustache Mask	Right Handed	Red Helmet	Bright Lights
Widget Wanda	Rocket Skates	Neon Cape	Right Handed	Green Beanie	Bright Lights
Mechanic Meg	Rocket Skates	Giant Box	Right Handed	Red Helmet	Squeaky Toys
Gears Gary	Rocket Skates	Glitter Cloak	Right Handed	Green Beanie	Squeaky Toys
Jimothy Jr	Laser Yo Yo	Giant Box	Left Handed	Red Helmet	Bright Lights
Piston Pete	Magnet Glove	Glitter Cloak	Right Handed	Green Beanie	Squeaky Toys

CLUE 1

Timothy counted the inventory on the assembly line and subtracted the missing parts to narrow down the suspects.

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

T	5243	2596	8453	3085	1971	7687	7687	5087	1971	3266	4474	5416	8453	7906	3266	5416	T
8912	8453	5087	7757	5087	8081	1971	5087	3266	5243	T	7208	5416	6284				

$$5817 - 574 = \boxed{} \rightarrow \boxed{\text{T}}$$

$11227 - 3540 = \boxed{} \rightarrow \boxed{\text{L}}$

$$11319 - 2407 = \boxed{} \rightarrow \boxed{\text{W}}$$

$$9408 - 1502 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$5202 - 1936 = \boxed{} \rightarrow \boxed{\text{N}}$$

$5932 - 1458 = \boxed{} \rightarrow \boxed{\text{D}}$

$9514 - 2306 = \boxed{} \rightarrow \boxed{\text{B}}$

$$8561 - 3145 = \boxed{} \rightarrow \boxed{\text{O}}$$

$$8431 - 350 = \boxed{} \rightarrow \boxed{\mathbf{G}}$$

$$3914 - 1943 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$8548 - 95 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$5568 - 2483 = \boxed{} \rightarrow \boxed{\mathbf{V}}$$

$$4971 - 2375 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$6523 - 1436 = \boxed{} \rightarrow \boxed{\text{A}}$$

$8227 - 1943 = \boxed{} \rightarrow \boxed{\text{X}}$

$$7867 - 110 = \boxed{} \rightarrow \boxed{\mathbf{R}}$$

Scratch space:

CLUE 2
Multiplication facts (1-12)

The security guard checked four rows of lockers with equal numbers of shelves to find a hidden hint.

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

T																T	T		
49	28	66	108	11	48	48	22	11	77	21	22	55	55	56	70	49	49	66	10
4	55	11	77	90	32	11	90	28	49	28	22	77	10						

$7 \times 7 = \square \rightarrow \text{T}$

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

$7 \times 11 = \square \rightarrow \text{N}$

$1 \times 11 = \square \rightarrow \text{I}$

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

$8 \times 7 = \square \rightarrow \text{P}$

$4 \times 8 = \square \rightarrow \text{R}$

$1 \times 4 = \square \rightarrow \text{U}$

$10 \times 9 = \square \rightarrow \text{G}$

$4 \times 12 = \square \rightarrow \text{L}$

$4 \times 7 = \square \rightarrow \text{H}$

$5 \times 11 = \square \rightarrow \text{S}$

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

$5 \times 2 = \square \rightarrow \text{D}$

$11 \times 6 = \square \rightarrow \text{E}$

$7 \times 3 = \square \rightarrow \text{W}$

Scratch space:

CLUE 3

Word problems

Jimothy asked the factory workers how many cog wheels each person packed during their morning shift.

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

Someone scared the villain off with S T O S .

53 9 71 80 77 70 48 48 53

There were 84 gizmo boxes. 31 were used up. How many gizmo boxes are left?

Answer: → S

Jimothy found 8 cog wheels yesterday and 72 more today. How many cog wheels in all?

Answer: → E

There were 16 toy robots. 7 were used up. How many toy robots are left?

Answer: → Q

Jimothy lined up 10 rows of 7 gizmo boxes. How many gizmo boxes in all?

Answer: → K

Jimothy found 74 springs yesterday and 3 more today. How many springs in all?

Answer: → A

Jimothy found 42 brass bolts yesterday and 6 more today. How many brass bolts in all?

Answer: → Y

Jimothy found 64 gizmo boxes yesterday and 7 more today. How many gizmo boxes in all?

Answer: → U

Scratch space:

CLUE 4

Multi-step word problems

To clear more names, Jimothy tallied the total gear shipments and subtracted the delivered boxes.

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

A strand of

R								
8	14	43	48	14	39	52	14	26

 hair turned up at the scene.

There were 34 brass bolts in all. 2 Assembly Crew used 5 brass bolts each. The other 3 Assembly Crew shared the rest equally. How many brass bolts did each of the other Assembly Crew get?

Answer: → **R**

There were 176 springs in all. 4 Assembly Crew used 5 springs each. The other 6 Assembly Crew shared the rest equally. How many springs did each of the other Assembly Crew get?

Answer: → **T**

Jimothy earned 5 springs in each of 6 rounds, plus 19 bonus springs. Then 10 springs were lost. How many springs are left?

Answer: → **L**

Jimothy collected 10 gizmo boxes in the morning and 18 gizmo boxes in the afternoon, then split them equally among 2 Assembly Crew. How many gizmo boxes did each get?

Answer: → **E**

Jimothy earned 3 gizmo boxes in each of 2 rounds, plus 47 bonus gizmo boxes. Then 10 gizmo boxes were lost. How many gizmo boxes are left?

Answer: → **D**

Jimothy filled 4 boxes with 8 springs each, then found 16 more springs. How many springs are there in all?

Answer: → **H**

Jimothy earned 7 brass bolts in each of 5 rounds, plus 19 bonus brass bolts. Then 2 brass bolts were lost. How many brass bolts are left?

Answer: → **M**

Scratch space:

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

Jimothy looked at the balance scale to find the missing weight needed to open the safe.

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:

$33 + \underline{\quad} = 43$

$12 + \underline{\quad} = 15$

$39 + \underline{\quad} = 43$

$23 + \underline{\quad} = 28$

$23 + \underline{\quad} = 34$

$3 + \underline{\quad} = 5$

$6 + \underline{\quad} = 15$

$7 + \underline{\quad} = 19$

$14 + \underline{\quad} = 21$

$28 + \underline{\quad} = 36$

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

Step 2 - cross out the sentence with each answer:

1. The villain pulled the lever with a magnet glove, then stomped past in a robot suit.
2. The villain pulled the lever with a magnet glove, then vanished under a glitter cloak.
3. The villain zapped the vault with a laser yo yo, then stomped past in a robot suit.
4. The villain swung across using a grapple hook, then vanished under a glitter cloak.
5. The villain pulled the lever with a magnet glove, then hid behind a moustache mask.
6. The villain blasted foam from a bubble cannon, then hid behind a moustache mask.
7. The villain blasted foam from a bubble cannon, then stomped past in a robot suit.
8. The villain zapped the vault with a laser yo yo, then hid behind a moustache mask.
9. The villain swung across using a grapple hook, then stomped past in a robot suit.
10. The villain swung across using a grapple hook, then hid behind a moustache mask.
11. The villain zoomed away on rocket skates, then hid behind a moustache mask.
12. The villain pulled the lever with a magnet glove, then ducked inside a giant box.

Answer Key

The Great Jimothy Toy Factory Mystery

Culprit: Valve Vance

Bubble Cannon · Moustache Mask · Right Handed · Red Helmet · Squeaky Toys

Trail: Start 21 → Clue 1 18 → Clue 2 12 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Subtraction): "THE VILLAIN DOES NOT WEAR A GIANT BOX"

$5817 - 574 = 5243$ (T) · $11227 - 3540 = 7687$ (L) · $11319 - 2407 = 8912$ (W) · $9408 - 1502 = 7906$ (S) · $5202 - 1936 = 3266$ (N) · $5932 - 1458 = 4474$ (D) · $9514 - 2306 = 7208$ (B) · $8561 - 3145 = 5416$ (O) · $8431 - 350 = 8081$ (G) · $3914 - 1943 = 1971$ (I) · $8548 - 95 = 8453$ (E) · $5568 - 2483 = 3085$ (V) · $4971 - 2375 = 2596$ (H) · $6523 - 1436 = 5087$ (A) · $8227 - 1943 = 6284$ (X) · $7867 - 110 = 7757$ (R)

Clue 2 (Multiplication facts (1-12)): "THE VILLAIN WAS SPOTTED USING RIGHT HAND"

$7 \times 7 = 49$ (T) · $7 \times 10 = 70$ (O) · $7 \times 11 = 77$ (N) · $1 \times 11 = 11$ (I) · $9 \times 12 = 108$ (V) · $8 \times 7 = 56$ (P) · $4 \times 8 = 32$ (R) · $1 \times 4 = 4$ (U) · $10 \times 9 = 90$ (G) · $4 \times 12 = 48$ (L) · $4 \times 7 = 28$ (H) · $5 \times 11 = 55$ (S) · $11 \times 2 = 22$ (A) · $5 \times 2 = 10$ (D) · $11 \times 6 = 66$ (E) · $7 \times 3 = 21$ (W)

Clue 3 (Word problems): "SQUEAKY TOYS"

There were 84 gizmo boxes. 31 were used up. How many gizmo boxes are left? = 53 (S) · Jimothy found 8 cog wheels yesterday and 72 more today. How many cog wheels in all? = 80 (E) · There were 16 toy robots. 7 were used up. How many toy robots are left? = 9 (Q) · Jimothy lined up 10 rows of 7 gizmo boxes. How many gizmo boxes in all? = 70 (K) · Jimothy found 74 springs yesterday and 3 more today. How many springs in all? = 77 (A) · Jimothy found 42 brass bolts yesterday and 6 more today. How many brass bolts in all? = 48 (Y) · Jimothy found 64 gizmo boxes yesterday and 7 more today. How many gizmo boxes in all? = 71 (U)

Clue 4 (Multi-step word problems): "RED HELMET"

There were 34 brass bolts in all. 2 Assembly Crew used 5 brass bolts each. The other 3 Assembly Crew shared the rest equally. How many brass bolts did each of the other Assembly Crew get? = 8 (R) · There were 176 springs in all. 4 Assembly Crew used 5 springs each. The other 6 Assembly Crew shared the rest equally. How many springs did each of the other Assembly Crew get? = 26 (T) · Jimothy earned 5 springs in each of 6 rounds, plus 19 bonus springs. Then 10 springs were lost. How many springs are left? = 39 (L) · Jimothy collected 10 gizmo boxes in the morning and 18 gizmo boxes in the afternoon, then split them equally among 2 Assembly Crew. How many gizmo boxes did each get? = 14 (E) · Jimothy earned 3 gizmo boxes in each of 2 rounds, plus 47 bonus gizmo boxes. Then 10 gizmo boxes were lost. How many gizmo boxes are left? = 43 (D) · Jimothy filled 4 boxes with 8 springs each, then found 16 more springs. How many springs are there in all? = 48 (H) · Jimothy earned 7 brass bolts in each of 5 rounds, plus 19 bonus brass bolts. Then 2 brass bolts were lost. How many brass bolts are left? = 52 (M)

Clue 5 (Missing addends): surviving statement is box 6 → Valve Vance

$33 + \underline{\quad} = 43 = 10$ · $12 + \underline{\quad} = 15 = 3$ · $39 + \underline{\quad} = 43 = 4$ · $23 + \underline{\quad} = 28 = 5$ · $23 + \underline{\quad} = 34 = 11$ · $3 + \underline{\quad} = 5 = 2$ · $6 + \underline{\quad} = 15 = 9$ · $7 + \underline{\quad} = 19 = 12$ · $14 + \underline{\quad} = 21 = 7$ · $28 + \underline{\quad} = 36 = 8$ · $3 + \underline{\quad} = 4 = 1$