



The Case of the Golden Stethoscope

Grade 10 math · Multiplication, Subtraction, Addition, Place value, Division · Reading level grades 7-9

Detective: _____ **Date:** _____

The hospital parade is starting soon at Johns Hopkins All Children's Hospital in St. Petersburg, but someone has hidden the ceremonial Golden Stethoscope! Follow the trail, solve the medical math challenges, and help the staff save the big celebration.

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 Mischief Maker is _____

Possible suspects

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

NAME	SPECIALTY DEPARTMENT	INVENTION TOOL	BADGE REEL POSITION	HAIR STYLE	BREAKROOM SNACK
Dr Marie Curie	Sports Medicine	Infrared Thermometer	Left-sided badge clip	Wavy blonde hair	Lemon water
Dr Alice Hamilton	Pediatric Neurosurgery	Infrared Thermometer	Left-sided badge clip	Straight black hair	Apple slices
Dr Rosalind Franklin	Neonatology	Clinical Tablet	Right-sided badge clip	Straight black hair	Lemon water
Dr Elizabeth Blackwell	Neonatology	Clinical Tablet	Left-sided badge clip	Straight black hair	Peppermint tea
Dr Chien Wu	Child Life Specialist	Clinical Tablet	Left-sided badge clip	Straight black hair	Lemon water
Dr Gerty Cori	Neonatology	Smart Reflex Hammer	Left-sided badge clip	Wavy blonde hair	Peppermint tea
Dr Charles Drew	Pediatric Cardiology	Infrared Thermometer	Left-sided badge clip	Curly red hair	Apple slices
Dr Helen Taussig	Pediatric Neurosurgery	Clinical Tablet	Right-sided badge clip	Curly red hair	Apple slices
Dr Patricia Bath	Pediatric Cardiology	Infrared Thermometer	Right-sided badge clip	Wavy blonde hair	Peppermint tea
Dr Flossie Wong	Sports Medicine	Smart Reflex Hammer	Left-sided badge clip	Straight black hair	Lemon water
Dr Mary Walker	Pediatric Neurosurgery	Laser Pointer	Left-sided badge clip	Curly red hair	Peppermint tea
Dr Rebecca Lee	Neonatology	Infrared Thermometer	Left-sided badge clip	Wavy blonde hair	Lemon water
Dr Mae Jemison	Sports Medicine	Clinical Tablet	Left-sided badge clip	Straight black hair	Lemon water
Dr Dorothy Hodgkin	Child Life Specialist	Digital Otoscope	Right-sided badge clip	Curly red hair	Apple slices
Dr Barbara McClintock	Child Life Specialist	Clinical Tablet	Right-sided badge clip	Straight black hair	Peppermint tea
Dr Jane Wright	Pediatric Neurosurgery	Laser Pointer	Left-sided badge clip	Straight black hair	Lemon water
Dr Virginia Apgar	Neonatology	Infrared Thermometer	Left-sided badge clip	Curly red hair	Apple slices
Dr Daniel Williams	Child Life Specialist	Laser Pointer	Left-sided badge clip	Straight black hair	Lemon water
Dr Gertrude Elion	Child Life Specialist	Digital Otoscope	Left-sided badge clip	Wavy blonde hair	Lemon water
Dr Clara Barton	Pediatric Neurosurgery	Smart Reflex Hammer	Left-sided badge clip	Straight black hair	Lemon water
Dr Kizzmekia Corbett	Child Life Specialist	Laser Pointer	Left-sided badge clip	Wavy blonde hair	Lemon water

CLUE 1
Multiplication facts (1-12)

To narrow down the suspect's department, you inspect the toy donation crates stacked in equal rows in the hospital basement.

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

T																	T
35	144	6	108	14	22	22	72	14	100	21	56	6	96	100	56	35	

													T		
36	96	6	72	22	72	96	6	54	3	56	14	100	35	6	54

$5 \times 7 = \square \rightarrow$ T	$12 \times 8 = \square \rightarrow$ S	$3 \times 1 = \square \rightarrow$ P
$10 \times 10 = \square \rightarrow$ N	$2 \times 3 = \square \rightarrow$ E	$6 \times 9 = \square \rightarrow$ R
$8 \times 7 = \square \rightarrow$ O	$2 \times 11 = \square \rightarrow$ L	$12 \times 3 = \square \rightarrow$ U
$7 \times 2 = \square \rightarrow$ I	$12 \times 12 = \square \rightarrow$ H	$12 \times 9 = \square \rightarrow$ V
$7 \times 3 = \square \rightarrow$ D	$8 \times 9 = \square \rightarrow$ A	

Scratch space:

CLUE 2

You check the scrub locker inventory and subtract the missing scrubs to figure out which floor the suspect visited.

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

[illegible]

$$6437 - 4635 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$5482 - 4147 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$5806 - 3156 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$6296 - 4303 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$6644 - 2744 = \boxed{} \rightarrow \boxed{\text{C}}$$

$4637 - 2704 = \boxed{} \rightarrow \boxed{\text{B}}$

$$5717 - 1452 = \boxed{} \rightarrow \boxed{\text{I}}$$

$9100 - 4843 = \boxed{} \rightarrow \boxed{\text{G}}$

$$4646 - 403 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$5106 - 2606 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$6380 - 2587 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$8524 - 1039 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$8162 - 1589 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$4421 - 1278 = \boxed{} \rightarrow \boxed{\text{P}}$$

$12033 - 4368 = \boxed{} \rightarrow \boxed{\text{N}}$

$$6215 - 3425 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$10250 - 2270 = \boxed{} \rightarrow \boxed{0}$$

Scratch space:

CLUE 3 Addition

A nurse combines the sticker counts from several pediatric recovery charts to unlock a restricted door log.

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

T										T							
8283	9813	9343	6683	2224	6683	9229	9343	4238	8283	9229	5474	9343	9136	9343	5474	6683	

4238	8332	3254	6506	3254	9343	2998	8332	8869	2798	5048	8283	9343	5474	

$3490 + 4793 = \boxed{} \rightarrow \boxed{\text{T}}$

$1434 + 1564 = \boxed{} \rightarrow \boxed{\text{M}}$

$2345 + 3129 = \boxed{} \rightarrow \boxed{\text{R}}$

$1694 + 2544 = \boxed{} \rightarrow \boxed{\text{C}}$

$3388 + 5955 = \boxed{} \rightarrow \boxed{\text{E}}$

$5930 + 3206 = \boxed{} \rightarrow \boxed{\text{F}}$

$4660 + 5153 = \boxed{} \rightarrow \boxed{\text{H}}$

$3533 + 5696 = \boxed{} \rightarrow \boxed{\text{P}}$

$3103 + 3403 = \boxed{} \rightarrow \boxed{\text{D}}$

$1566 + 1688 = \boxed{} \rightarrow \boxed{\text{L}}$

$6205 + 2664 = \boxed{} \rightarrow \boxed{\text{N}}$

$2564 + 2484 = \boxed{} \rightarrow \boxed{\text{A}}$

$1326 + 1472 = \boxed{} \rightarrow \boxed{\text{W}}$

$5378 + 2954 = \boxed{} \rightarrow \boxed{\text{O}}$

$1358 + 866 = \boxed{} \rightarrow \boxed{\text{U}}$

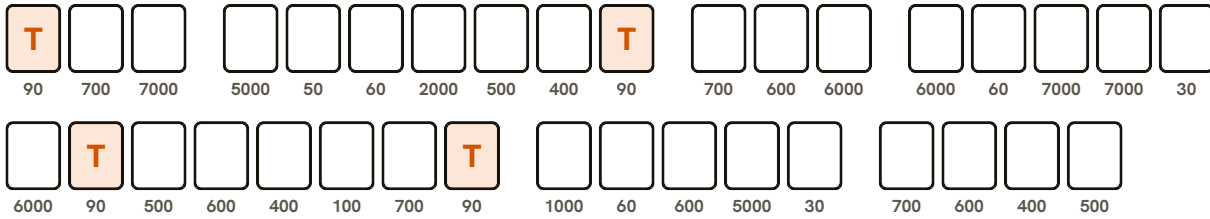
$2224 + 4459 = \boxed{} \rightarrow \boxed{\text{S}}$

Scratch space:

CLUE 4 Place value

The digital readout on the hallway pager is blinking a code, and you must analyze the digit in the tens place to find the next lead.

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



What is the value of the 9 in 584,693? → **T**

What is the value of the 1 in 733,157? → **G**

What is the value of the 5 in 75,306? → **C**

What is the value of the 7 in 64,753? → **H**

What is the value of the 4 in 19,466? → **I**

What is the value of the 6 in 82,643? → **A**

What is the value of the 6 in 896,414? → **S**

What is the value of the 7 in 317,043? → **E**

What is the value of the 2 in 42,375? → **P**

What is the value of the 3 in 72,038? → **K**

What is the value of the 1 in 81,466? → **B**

What is the value of the 5 in 938,509? → **R**

What is the value of the 5 in 17,358? → **U**

What is the value of the 6 in 353,165? → **L**

Scratch space:

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

A volunteer shares a box of pediatric coloring books equally among the therapy wards to get the final clue from the staff.

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:

$28 \div 4 = \boxed{}$

$30 \div 10 = \boxed{}$

$25 \div 5 = \boxed{}$

$24 \div 12 = \boxed{}$

$6 \div 1 = \boxed{}$

$20 \div 2 = \boxed{}$

$4 \div 1 = \boxed{}$

$12 \div 1 = \boxed{}$

$48 \div 6 = \boxed{}$

$22 \div 2 = \boxed{}$

$63 \div 7 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain walked through the rehab center, then misplaced a checklist clip.
2. The villain sneaked into the main lobby, then dropped a pack of stickers.
3. The villain explored the outdoor playground, then hummed the hospital song.
4. The villain explored the outdoor playground, then left a trail of toy bandages.
5. The villain visited the playroom lounge, then hummed the hospital song.
6. The villain visited the playroom lounge, then dropped a pack of stickers.
7. The villain explored the outdoor playground, then misplaced a checklist clip.
8. The villain sneaked into the main lobby, then misplaced a checklist clip.
9. The villain visited the playroom lounge, then misplaced a checklist clip.
10. The villain walked through the rehab center, then waved to the security guards.
11. The villain borrowed the golden stethoscope, then waved to the security guards.
12. The villain borrowed the golden stethoscope, then left a trail of toy bandages.

Answer Key

The Case of the Golden Stethoscope

Culprit: Dr Clara Barton

Pediatric Neurosurgery · Smart Reflex Hammer · Left-sided badge clip · Straight black hair · Lemon water

Trail: Start 21 → Clue 1 17 → Clue 2 12 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE A LASER POINTER"

$5 \times 7 = 35$ (T) · $12 \times 8 = 96$ (S) · $3 \times 1 = 3$ (P) · $10 \times 10 = 100$ (N) · $2 \times 3 = 6$ (E) · $6 \times 9 = 54$ (R) · $8 \times 7 = 56$ (O) · $2 \times 11 = 22$ (L) · $12 \times 3 = 36$ (U) · $7 \times 2 = 14$ (I) · $12 \times 12 = 144$ (H) · $12 \times 9 = 108$ (V) · $7 \times 3 = 21$ (D) · $8 \times 9 = 72$ (A)

Clue 2 (Subtraction): "THE SUSPECT CLIPS THEIR BADGE ON THE LEFT"

$6437 - 4635 = 1802$ (T) · $5482 - 4147 = 1335$ (H) · $5806 - 3156 = 2650$ (U) · $6296 - 4303 = 1993$ (D) · $6644 - 2744 = 3900$ (C) · $4637 - 2704 = 1933$ (B) · $5717 - 1452 = 4265$ (I) · $9100 - 4843 = 4257$ (G) · $4646 - 403 = 4243$ (E) · $5106 - 2606 = 2500$ (L) · $6380 - 2587 = 3793$ (R) · $8524 - 1039 = 7485$ (A) · $8162 - 1589 = 6573$ (F) · $4421 - 1278 = 3143$ (P) · $12033 - 4368 = 7665$ (N) · $6215 - 3425 = 2790$ (S) · $10250 - 2270 = 7980$ (O)

Clue 3 (Addition): "THE SUSPECT PREFERS COLD LEMON WATER"

$3490 + 4793 = 8283$ (T) · $1434 + 1564 = 2998$ (M) · $2345 + 3129 = 5474$ (R) · $1694 + 2544 = 4238$ (C) · $3388 + 5955 = 9343$ (E) · $5930 + 3206 = 9136$ (F) · $4660 + 5153 = 9813$ (H) · $3533 + 5696 = 9229$ (P) · $3103 + 3403 = 6506$ (D) · $1566 + 1688 = 3254$ (L) · $6205 + 2664 = 8869$ (N) · $2564 + 2484 = 5048$ (A) · $1326 + 1472 = 2798$ (W) · $5378 + 2954 = 8332$ (O) · $1358 + 866 = 2224$ (U) · $2224 + 4459 = 6683$ (S)

Clue 4 (Place value): "THE CULPRIT HAS SLEEK STRAIGHT BLACK HAIR"

What is the value of the 9 in 584,693? = 90 (T) · What is the value of the 1 in 733,157? = 100 (G) · What is the value of the 5 in 75,306? = 5000 (C) · What is the value of the 7 in 64,753? = 700 (H) · What is the value of the 4 in 19,466? = 400 (I) · What is the value of the 6 in 82,643? = 600 (A) · What is the value of the 6 in 896,414? = 6000 (S) · What is the value of the 7 in 317,043? = 7000 (E) · What is the value of the 2 in 42,375? = 2000 (P) · What is the value of the 3 in 72,038? = 30 (K) · What is the value of the 1 in 81,466? = 1000 (B) · What is the value of the 5 in 938,509? = 500 (R) · What is the value of the 5 in 17,358? = 50 (U) · What is the value of the 6 in 353,165? = 60 (L)

Clue 5 (Division facts (1-12)): surviving statement is box 1 → Dr Clara Barton

$28 \div 4 = 7$ · $30 \div 10 = 3$ · $25 \div 5 = 5$ · $24 \div 12 = 2$ · $6 \div 1 = 6$ · $20 \div 2 = 10$ · $4 \div 1 = 4$ · $12 \div 1 = 12$ · $48 \div 6 = 8$ · $22 \div 2 = 11$ · $63 \div 7 = 9$