



The Mystery of the Missing Chrysalis

Grade 5 math · Place value, Addition, Subtraction, Rounding, Division · Reading level grades 3-4

Detective: _____ Date: _____

Someone snuck into the Meadow Insect Observatory and stole the rare Golden Chrysalis! Solve the math clues to uncover who did it.

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 bug thief is _____

Possible suspects

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

NAME	SPECIAL ABILITY	BUG GEAR	DOMINANT HAND	ANTENNA STYLE	VULNERABILITY
Antonie Leeuwenhoek	acid sting	bug net	left handed	fuzzy antenna	bright light
Alice Eastwood	sonic chirp	pollen bomb	left handed	feathery antenna	bright light
Anna Comstock	sonic chirp	dew goggles	left handed	striped antenna	citrus spray
Edward Wilson	pincer grip	bug net	right handed	fuzzy antenna	citrus spray
Edith Patch	venom spray	bug net	right handed	feathery antenna	citrus spray
Jane Colden	web shooter	pollen bomb	left handed	fuzzy antenna	citrus spray
Maria Merian	web shooter	dew goggles	left handed	fuzzy antenna	bright light
Margaret Fountaine	pincer grip	pheromone spray	left handed	fuzzy antenna	citrus spray
Lucy Say	sonic chirp	pheromone spray	right handed	striped antenna	bright light
Florence Merriam	web shooter	pollen bomb	right handed	fuzzy antenna	loud whistle
Barbara McClintock	pincer grip	bug net	left handed	feathery antenna	bright light
Chien Wu	venom spray	pollen bomb	right handed	fuzzy antenna	bright light
Rachel Carson	sonic chirp	bug net	right handed	fuzzy antenna	citrus spray
Thomas Say	web shooter	pollen bomb	right handed	fuzzy antenna	citrus spray
Mary Treat	sonic chirp	pollen bomb	right handed	feathery antenna	citrus spray
Eleanor Ormerod	sonic chirp	pollen bomb	right handed	fuzzy antenna	citrus spray
Robert Hooke	sonic chirp	pollen bomb	right handed	striped antenna	citrus spray
Karl Frisch	sonic chirp	leaf shield	right handed	fuzzy antenna	loud whistle
Jan Swammerdam	acid sting	pollen bomb	left handed	fuzzy antenna	loud whistle
Charles Darwin	pincer grip	leaf shield	right handed	feathery antenna	bright light
Miriam Rothschild	acid sting	leaf shield	right handed	fuzzy antenna	citrus spray

CLUE 1

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

600 90 80 4000 500 80 30 1000 8000 40 70 2000 9000 400 80 4000 500 400 600 70 4000 80 30 10 80 30 20 4000 90 700 80 10 9000

T

10

U

10

L

D

10

K

10

Y

11

B

→

10

G

E

10

A

11

N

10

I

11

F

11

O

10

H

Scratch space:

CLUE 2 Addition

Add up the counts of insect tracks left near the display case.

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

T									T				T	
2740	3532	7832	2484	9639	2484	7343	7832	4222	2740	5670	7832	6783	2740	9337

				T			T		T									T
7343	8562	5085	9338	2740	7166	5085	2740	3532	2740	3532	7832	5085	8562	8562	5085	4199	3532	2740

3532	9337	9338	2893

$$1843 + 897 = \boxed{} \rightarrow \boxed{T}$$

$$1939 + 2283 = \boxed{} \rightarrow \boxed{C}$$

$$2006 + 887 = \boxed{} \rightarrow \boxed{D}$$

$$5618 + 3720 = \boxed{} \rightarrow \boxed{N}$$

$$1318 + 2881 = \boxed{} \rightarrow \boxed{G}$$

$$2736 + 2934 = \boxed{} \rightarrow \boxed{L}$$

$$3489 + 3677 = \boxed{} \rightarrow \boxed{W}$$

$$6200 + 3439 = \boxed{} \rightarrow \boxed{U}$$

$$2162 + 2923 = \boxed{} \rightarrow \boxed{I}$$

$$3664 + 4168 = \boxed{} \rightarrow \boxed{E}$$

$$2217 + 1315 = \boxed{} \rightarrow \boxed{H}$$

$$1634 + 850 = \boxed{} \rightarrow \boxed{S}$$

$$4824 + 2519 = \boxed{} \rightarrow \boxed{P}$$

$$4998 + 4339 = \boxed{} \rightarrow \boxed{A}$$

$$5898 + 2664 = \boxed{} \rightarrow \boxed{R}$$

$$4172 + 2611 = \boxed{} \rightarrow \boxed{F}$$

Scratch space:

CLUE 3
Subtraction

Subtract the unbroken specimen jars from the total count to see what was stolen.

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

T																T				
6219	3576	3261	2717	3936	5870	4193	7597	6247	7597	4193	3239	7771	3261	6219	3576	3261	6888			
						T				T										
1598	5870	7642	6654	8802	3641	6219	3576	7642	3641	6219	4193	3936	6247	6247	3319	4193	5870	7816		

$8709 - 2490 = \boxed{} \rightarrow \boxed{\text{T}}$

$9971 - 2200 = \boxed{} \rightarrow \boxed{\text{V}}$

$8085 - 4766 = \boxed{} \rightarrow \boxed{\text{P}}$

$12121 - 4305 = \boxed{} \rightarrow \boxed{\text{Y}}$

$9503 - 1861 = \boxed{} \rightarrow \boxed{\text{C}}$

$7432 - 3856 = \boxed{} \rightarrow \boxed{\text{H}}$

$7973 - 2103 = \boxed{} \rightarrow \boxed{\text{A}}$

$5511 - 1870 = \boxed{} \rightarrow \boxed{\text{I}}$

$11002 - 3405 = \boxed{} \rightarrow \boxed{\text{D}}$

$11875 - 3073 = \boxed{} \rightarrow \boxed{\text{W}}$

$2898 - 181 = \boxed{} \rightarrow \boxed{\text{G}}$

$6876 - 222 = \boxed{} \rightarrow \boxed{\text{K}}$

$4704 - 3106 = \boxed{} \rightarrow \boxed{\text{B}}$

$6326 - 2390 = \boxed{} \rightarrow \boxed{\text{U}}$

$6563 - 2370 = \boxed{} \rightarrow \boxed{\text{R}}$

$6468 - 3207 = \boxed{} \rightarrow \boxed{\text{E}}$

$9818 - 2930 = \boxed{} \rightarrow \boxed{\text{M}}$

$3663 - 424 = \boxed{} \rightarrow \boxed{\text{O}}$

$10855 - 4608 = \boxed{} \rightarrow \boxed{\text{S}}$

Scratch space:

CLUE 4 Rounding

The digital air monitor only shows humidity levels rounded to the nearest ten.

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

A						A						A		A	
170	90	20	70	70	700	170	290	2900	2300	290	290	170	7000	170	900
								A							
90	1100	20	290	4300	290	2300	170	500	2900	430	2300	50	1100	130	5000

Round 169 to the nearest ten → **A**

Round 694 to the nearest hundred → **Y**

Round 2,882 to the nearest hundred → **T**

Round 126 to the nearest ten → **C**

Round 87 to the nearest ten → **F**

Round 1,129 to the nearest hundred → **O**

Round 5,197 to the nearest thousand → **K**

Round 6,772 to the nearest thousand → **W**

Round 2,297 to the nearest hundred → **E**

Round 48 to the nearest ten → **L**

Round 430 to the nearest ten → **H**

Round 454 to the nearest hundred → **R**

Round 4,316 to the nearest hundred → **D**

Round 70 to the nearest ten → **Z**

Round 869 to the nearest hundred → **S**

Round 286 to the nearest ten → **N**

Round 19 to the nearest ten → **U**

Scratch space:

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

Divide the leaf rewards evenly among the terrarium feeding stations.

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:

$16 \div 4 = \boxed{}$

$33 \div 11 = \boxed{}$

$40 \div 8 = \boxed{}$

$96 \div 12 = \boxed{}$

$84 \div 7 = \boxed{}$

$36 \div 4 = \boxed{}$

$7 \div 1 = \boxed{}$

$7 \div 7 = \boxed{}$

$99 \div 9 = \boxed{}$

$54 \div 9 = \boxed{}$

$14 \div 7 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain sprayed paralyzing venom, then confused the scout bugs with pheromone spray.
2. The villain fired sticky silk webs, then trapped the guard under a bug net.
3. The villain emitted a dizzying sonic chirp, then trapped the guard under a bug net.
4. The villain fired sticky silk webs, then vanished behind a cloud from a pollen bomb.
5. The villain emitted a dizzying sonic chirp, then vanished behind a cloud from a pollen bomb.
6. The villain fired sticky silk webs, then blocked the alarms using a leaf shield.
7. The villain shot burning acid droplets, then adjusted dew goggles to see in the dark.
8. The villain emitted a dizzying sonic chirp, then confused the scout bugs with pheromone spray.
9. The villain fired sticky silk webs, then adjusted dew goggles to see in the dark.
10. The villain crushed the glass case with a pincer grip, then trapped the guard under a bug net.
11. The villain sprayed paralyzing venom, then vanished behind a cloud from a pollen bomb.
12. The villain emitted a dizzying sonic chirp, then blocked the alarms using a leaf shield.

Answer Key

The Mystery of the Missing Chrysalis

Culprit: Edward Wilson

pincer grip · bug net · right handed · fuzzy antenna · citrus spray

Trail: Start 21 → Clue 1 18 → Clue 2 10 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE SNEAKY BUG DOES NOT USE A LEAF SHIELD"

What is the value of the 6 in 50,641? = 600 (T) · What is the value of the 7 in 32,574? = 70 (U) · What is the value of the 1 in 466,512? = 10 (L) · What is the value of the 9 in 39,788? = 9000 (D) · What is the value of the 1 in 71,840? = 1000 (K) · What is the value of the 8 in 948,920? = 8000 (Y) · What is the value of the 4 in 553,741? = 40 (B) · What is the value of the 4 in 124,390? = 4000 (S) · What is the value of the 2 in 132,847? = 2000 (G) · What is the value of the 8 in 91,485? = 80 (E) · What is the value of the 3 in 71,931? = 30 (A) · What is the value of the 5 in 836,520? = 500 (N) · What is the value of the 7 in 52,712? = 700 (I) · What is the value of the 2 in 51,727? = 20 (F) · What is the value of the 4 in 295,402? = 400 (O) · What is the value of the 9 in 81,092? = 90 (H)

Clue 2 (Addition): "THE SUSPECT LEFT A PRINT WITH THEIR RIGHT HAND"

1843 + 897 = 2740 (T) · 1939 + 2283 = 4222 (C) · 2006 + 887 = 2893 (D) · 5618 + 3720 = 9338 (N) · 1318 + 2881 = 4199 (G) · 2736 + 2934 = 5670 (L) · 3489 + 3677 = 7166 (W) · 6200 + 3439 = 9639 (U) · 2162 + 2923 = 5085 (I) · 3664 + 4168 = 7832 (E) · 2217 + 1315 = 3532 (H) · 1634 + 850 = 2484 (S) · 4824 + 2519 = 7343 (P) · 4998 + 4339 = 9337 (A) · 5898 + 2664 = 8562 (R) · 4172 + 2611 = 6783 (F)

Clue 3 (Subtraction): "THE GUARDS DROVE THEM BACK WITH CITRUS SPRAY"

8709 - 2490 = 6219 (T) · 9971 - 2200 = 7771 (V) · 8085 - 4766 = 3319 (P) · 12121 - 4305 = 7816 (Y) · 9503 - 1861 = 7642 (C) · 7432 - 3856 = 3576 (H) · 7973 - 2103 = 5870 (A) · 5511 - 1870 = 3641 (I) · 11002 - 3405 = 7597 (D) · 11875 - 3073 = 8802 (W) · 2898 - 181 = 2717 (G) · 6876 - 222 = 6654 (K) · 4704 - 3106 = 1598 (B) · 6326 - 2390 = 3936 (U) · 6563 - 2370 = 4193 (R) · 6468 - 3207 = 3261 (E) · 9818 - 2930 = 6888 (M) · 3663 - 424 = 3239 (O) · 10855 - 4608 = 6247 (S)

Clue 4 (Rounding): "A FUZZY ANTENNA WAS FOUND NEAR THE LOCK"

Round 169 to the nearest ten = 170 (A) · Round 694 to the nearest hundred = 700 (Y) · Round 2,882 to the nearest hundred = 2900 (T) · Round 126 to the nearest ten = 130 (C) · Round 87 to the nearest ten = 90 (F) · Round 1,129 to the nearest hundred = 1100 (O) · Round 5,197 to the nearest thousand = 5000 (K) · Round 6,772 to the nearest thousand = 7000 (W) · Round 2,297 to the nearest hundred = 2300 (E) · Round 48 to the nearest ten = 50 (L) · Round 430 to the nearest ten = 430 (H) · Round 454 to the nearest hundred = 500 (R) · Round 4,316 to the nearest hundred = 4300 (D) · Round 70 to the nearest ten = 70 (Z) · Round 869 to the nearest hundred = 900 (S) · Round 286 to the nearest ten = 290 (N) · Round 19 to the nearest ten = 20 (U)

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

16 ÷ 4 = 4 · 33 ÷ 11 = 3 · 40 ÷ 8 = 5 · 96 ÷ 12 = 8 · 84 ÷ 7 = 12 · 36 ÷ 4 = 9 · 7 ÷ 1 = 7 · 7 ÷ 7 = 1 · 99 ÷ 9 = 11 · 54 ÷ 9 = 6 · 14 ÷ 7 = 2