The Whispering Wings Heist

Grade 7 math · Multiplication, Fractions of a number, Place value, Integers · Reading level grades 7-9

Detective: _____ **Date:** _____

A rare Golden Monarch cocoon has vanished from the Sunlit Canopy Conservatory right before the annual Spring Hatching. The thief left behind floral scents, scattered silk, and gear tracks. Analyze the clues to catch the culprit before they escape with the specimen!

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 The Chrysalis Thief is _____

Possible suspects

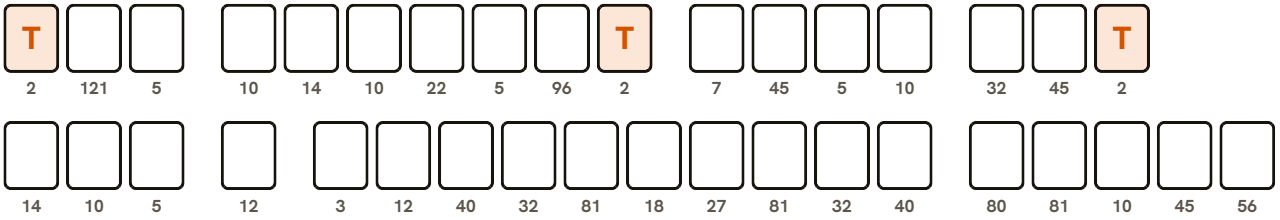
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	WING GEAR	INFILTRATION TOOL	DOMINANT HAND	DISGUISE HAIR	REPELLENT MIST
Oliver Vance	Solar Sails	Pollen Blower	Left-handed	Velvet Black Dye	Peppermint Fog
Quentin Blake	Glider Wings	Magnifying Visor	Right-handed	Cobalt Blue Dye	Lavender Vapor
Fiona Gallagher	Silk Cables	Nectar Sprayer	Right-handed	Cobalt Blue Dye	Peppermint Fog
Arthur Pendelton	Hover Packs	Nectar Sprayer	Right-handed	Velvet Black Dye	Peppermint Fog
Penelope Cruz	Hover Packs	Silk Cutters	Left-handed	Velvet Black Dye	Peppermint Fog
Dante Brooks	Silk Cables	Pollen Blower	Left-handed	Velvet Black Dye	Peppermint Fog
Maya Lin	Silk Cables	Magnifying Visor	Right-handed	Velvet Black Dye	Peppermint Fog
Rosalie Dupuis	Solar Sails	UV Flashlight	Right-handed	Velvet Black Dye	Peppermint Fog
Iris Chen	Silk Cables	Magnifying Visor	Left-handed	Cobalt Blue Dye	Peppermint Fog
Gavin MacLeod	Thermal Cloak	Pollen Blower	Right-handed	Velvet Black Dye	Peppermint Fog
Chloe Bennett	Solar Sails	Pollen Blower	Right-handed	Velvet Black Dye	Lavender Vapor
Tristan Sterling	Solar Sails	Pollen Blower	Right-handed	Velvet Black Dye	Peppermint Fog
Ursula Vance	Silk Cables	Magnifying Visor	Right-handed	Bright Orange Dye	Eucalyptus Spray
Talia Gomez	Thermal Cloak	UV Flashlight	Right-handed	Cobalt Blue Dye	Eucalyptus Spray
Leo Sterling	Hover Packs	UV Flashlight	Right-handed	Cobalt Blue Dye	Eucalyptus Spray
Julian Vance	Solar Sails	Silk Cutters	Left-handed	Velvet Black Dye	Eucalyptus Spray
Marcus Thorne	Hover Packs	UV Flashlight	Left-handed	Cobalt Blue Dye	Lavender Vapor
Harrison Forde	Glider Wings	Pollen Blower	Left-handed	Cobalt Blue Dye	Peppermint Fog
Samira Khan	Glider Wings	UV Flashlight	Right-handed	Bright Orange Dye	Peppermint Fog
Zoe Takahashi	Thermal Cloak	Silk Cutters	Right-handed	Bright Orange Dye	Eucalyptus Spray
Siddharth Patel	Thermal Cloak	Nectar Sprayer	Right-handed	Bright Orange Dye	Lavender Vapor

CLUE 1 Multiplication facts (1-12)

The suspect left equal rows of trays in the breeding lab. Multiply the rows to calculate the missing cocoons.

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



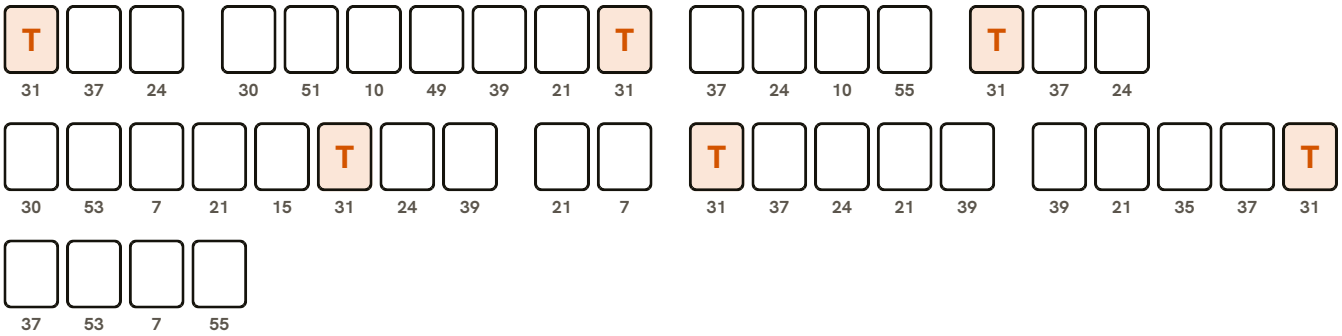
1 × 2 = ☐ → T	8 × 4 = ☐ → N	1 × 12 = ☐ → A	8 × 5 = ☐ → G
2 × 7 = ☐ → U	11 × 11 = ☐ → H	8 × 7 = ☐ → R	
2 × 9 = ☐ → F	10 × 8 = ☐ → V	2 × 5 = ☐ → S	1 × 7 = ☐ → D
2 × 11 = ☐ → P	3 × 9 = ☐ → Y	5 × 1 = ☐ → E	3 × 1 = ☐ → M
9 × 9 = ☐ → I	9 × 5 = ☐ → O	8 × 12 = ☐ → C	

Scratch space:

CLUE 2 Fractions of a number

> Only a fraction of the tagged butterflies in the flight room were disturbed. Solve the fraction to isolate the suspect.

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



2/10 of 155 = ☐ → T

4/8 of 74 = ☐ → H

6/8 of 68 = ☐ → U

5/6 of 36 = ☐ → C

5/10 of 78 = ☐ → R

5/10 of 30 = ☐ → S

1/10 of 70 = ☐ → N

5/6 of 42 = ☐ → G

3/6 of 106 = ☐ → A

2/4 of 42 = ☐ → I

3/6 of 98 = ☐ → P

1/2 of 110 = ☐ → D

3/6 of 20 = ☐ → L

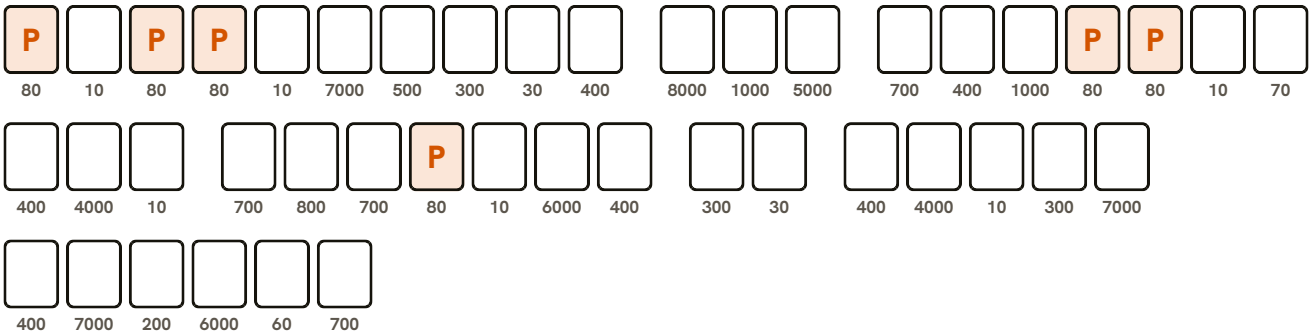
1/5 of 120 = ☐ → E

Scratch space:

CLUE 3 Place value

Security logs recorded encoded digit strings near the main gate. Decipher the place value to reveal the timestamp.

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



What is the value of the 8 in 61,384? ☐ → P

What is the value of the 8 in 98,715? ☐ → F

What is the value of the 1 in 51,595? ☐ → O

What is the value of the 3 in 288,327? ☐ → I

What is the value of the 4 in 524,899? ☐ → H

What is the value of the 2 in 349,267? ☐ → A

What is the value of the 7 in 597,629? ☐ → R

What is the value of the 8 in 195,843? ☐ → U

What is the value of the 1 in 585,012? ☐ → E

What is the value of the 6 in 99,568? ☐ → K

What is the value of the 5 in 139,597? ☐ → M

What is the value of the 7 in 615,370? ☐ → D

What is the value of the 3 in 68,137? ☐ → N

What is the value of the 4 in 13,465? ☐ → T

What is the value of the 7 in 62,720? ☐ → S

What is the value of the 6 in 96,400? ☐ → C

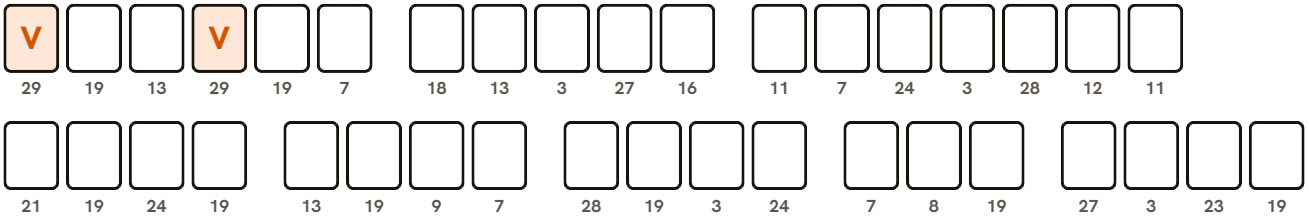
What is the value of the 5 in 75,203? ☐ → G

Scratch space:

CLUE 4 Integers

Track temperature readings above and below freezing inside the chrysalis vault to follow the intruder trail.

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



(-12) + 41 = ☐ → V

(-14) + 23 = ☐ → F

(-12) + 15 = ☐ → A

(-6) + 33 = ☐ → C

(-3) + 11 = ☐ → H

(-8) + 36 = ☐ → N

(-4) + 23 = ☐ → E

14 - (-7) = ☐ → W

1 - (-6) = ☐ → T

13 - (-5) = ☐ → B

(-14) + 26 = ☐ → D

(-10) + 26 = ☐ → K

22 - (-1) = ☐ → G

(-7) + 18 = ☐ → S

(-7) + 31 = ☐ → R

8 - (-5) = ☐ → L

Scratch space:

CLUE 5 Fractions of a number - the last clue

> A portion of the nectar supplies was consumed during the getaway. Find the fractional amount remaining to uncover final 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:

3/8 of 24 = ☐	2/5 of 10 = ☐	1/10 of 110 = ☐	1/6 of 12 = ☐
1/2 of 14 = ☐	5/10 of 2 = ☐	5/10 of 12 = ☐	1/2 of 20 = ☐
2/6 of 15 = ☐	3/4 of 4 = ☐	1/5 of 40 = ☐	

Step 2 - cross out the sentence with each answer:

1. The villain floated over security sensors using hover packs, then inspected silk threads with a magnifying visor.
2. The villain soared silently using solar sails, then distracted security guards using a nectar sprayer.
3. The villain swung from high rafters on silk cables, then sliced through mesh netting with silk cutters.
4. The villain slipped past thermal cameras in a thermal cloak, then created a pollen cloud using a pollen blower.
5. The villain slipped past thermal cameras in a thermal cloak, then illuminated dark corners with a uv flashlight.
6. The villain flew across the glass dome with glider wings, then created a pollen cloud using a pollen blower.
7. The villain floated over security sensors using hover packs, then sliced through mesh netting with silk cutters.
8. The villain slipped past thermal cameras in a thermal cloak, then distracted security guards using a nectar sprayer.
9. The villain floated over security sensors using hover packs, then distracted security guards using a nectar sprayer.
10. The villain flew across the glass dome with glider wings, then illuminated dark corners with a uv flashlight.
11. The villain soared silently using solar sails, then illuminated dark corners with a uv flashlight.
12. The villain soared silently using solar sails, then created a pollen cloud using a pollen blower.

TEACHER / PARENT

Answer Key

The Whispering Wings Heist

Culprit: Tristan Sterling

Solar Sails · Pollen Blower · Right-handed · Velvet Black Dye · Peppermint Fog

Trail: Start 21 → Clue 1 17 → Clue 2 11 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE SUSPECT DOES NOT USE A MAGNIFYING VISOR"

1 × 2 = 2 (T) · 8 × 4 = 32 (N) · 1 × 12 = 12 (A) · 8 × 5 = 40 (G) · 2 × 7 = 14 (U) · 11 × 11 = 121 (H) · 8 × 7 = 56 (R) · 2 × 9 = 18 (F) · 10 × 8 = 80 (V) · 2 × 5 = 10 (S) · 1 × 7 = 7 (D) · 2 × 11 = 22 (P) · 3 × 9 = 27 (Y) · 5 × 1 = 5 (E) · 3 × 1 = 3 (M) · 9 × 9 = 81 (I) · 9 × 5 = 45 (O) · 8 × 12 = 96 (C)

Clue 2 (Fractions of a number): "THE CULPRIT HELD THE CANISTER IN THEIR RIGHT HAND"

2/10 of 155 = 31 (T) · 4/8 of 74 = 37 (H) · 6/8 of 68 = 51 (U) · 5/6 of 36 = 30 (C) · 5/10 of 78 = 39 (R) · 5/10 of 30 = 15 (S) · 1/10 of 70 = 7 (N) · 5/6 of 42 = 35 (G) · 3/6 of 106 = 53 (A) · 2/4 of 42 = 21 (I) · 3/6 of 98 = 49 (P) · 1/2 of 110 = 55 (D) · 3/6 of 20 = 10 (L) · 1/5 of 120 = 24 (E)

Clue 3 (Place value): "PEPPERMINT FOG STOPPED THE SUSPECT IN THEIR TRACKS"

What is the value of the 8 in 61,384? = 80 (P) · What is the value of the 8 in 98,715? = 8000 (F) · What is the value of the 1 in 51,595? = 1000 (O) · What is the value of the 3 in 288,327? = 300 (I) · What is the value of the 4 in 524,899? = 4000 (H) · What is the value of the 2 in 349,267? = 200 (A) · What is the value of the 7 in 597,629? = 7000 (R) · What is the value of the 8 in 195,843? = 800 (U) · What is the value of the 1 in 585,012? = 10 (E) · What is the value of the 6 in 99,568? = 60 (K) · What is the value of the 5 in 139,597? = 500 (M) · What is the value of the 7 in 615,370? = 70 (D) · What is the value of the 3 in 68,137? = 30 (N) · What is the value of the 4 in 13,465? = 400 (T) · What is the value of the 7 in 62,720? = 700 (S) · What is the value of the 6 in 96,400? = 6000 (C) · What is the value of the 5 in 75,203? = 5000 (G)

Clue 4 (Integers): "VELVET BLACK STRANDS WERE LEFT NEAR THE CAGE"

(-12) + 41 = 29 (V) · (-14) + 23 = 9 (F) · (-12) + 15 = 3 (A) · (-6) + 33 = 27 (C) · (-3) + 11 = 8 (H) · (-8) + 36 = 28 (N) · (-4) + 23 = 19 (E) · 14 - (-7) = 21 (W) · 1 - (-6) = 7 (T) · 13 - (-5) = 18 (B) · (-14) + 26 = 12 (D) · (-10) + 26 = 16 (K) · 22 - (-1) = 23 (G) · (-7) + 18 = 11 (S) · (-7) + 31 = 24 (R) · 8 - (-5) = 13 (L)

Clue 5 (Fractions of a number): surviving statement is box 12 → Tristan Sterling

3/8 of 24 = 9 · 2/5 of 10 = 4 · 1/10 of 110 = 11 · 1/6 of 12 = 2 · 1/2 of 14 = 7 · 5/10 of 2 = 1 · 5/10 of 12 = 6 · 1/2 of 20 = 10 · 2/6 of 15 = 5 · 3/4 of 4 = 3 · 1/5 of 40 = 8