The Case of the Missing Sun Gem

Grade 6 math · Fractions of a number, Place value, Multiplication, Word problems · Reading level grades 3-4

Detective: _____ **Date:** _____

Someone snuck into the Whispering Jungle Ruins last night and snatched the ancient Sun Gem from its pedestal! Head Curator Penny needs your detective skills to inspect the scene, decode the left-behind clues, and find out which explorer is the sneaky thief.

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 Masked Bandit is _____

Possible suspects

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

NAME	PRIMARY GADGET	SPECIAL GEAR	DOMINANT HAND	HAIR STYLE	SECRET WEAKNESS
Toby Marsh	smoke pellet	camo cloak	left handed	spiky hair	bright flash
Mason West	grappling hook	jet pack	left handed	silver hair	bright flash
Tess Montgomery	glider wings	camo cloak	left handed	silver hair	bright flash
Ruby Chen	sonic whistle	mag gloves	right handed	spiky hair	water splash
Barnaby Finch	sonic whistle	night goggles	left handed	silver hair	bright flash
Jasper Vance	smoke pellet	stilt boots	right handed	silver hair	water splash
Elena Drake	sonic whistle	stilt boots	right handed	silver hair	bright flash
Ivy Redwood	glider wings	jet pack	right handed	braided hair	bright flash
Dr Nora Cruz	laser torch	mag gloves	left handed	silver hair	bright flash
Hugo Frost	laser torch	camo cloak	right handed	spiky hair	bright flash
Zoe Sterling	grappling hook	night goggles	right handed	spiky hair	bright flash
Leo Rivers	laser torch	stilt boots	left handed	silver hair	water splash
Professor Dax	smoke pellet	stilt boots	left handed	silver hair	water splash
Gavin Steele	sonic whistle	stilt boots	right handed	silver hair	loud whistle
Clara Fox	glider wings	jet pack	left handed	silver hair	loud whistle
Officer Trent	sonic whistle	stilt boots	right handed	braided hair	loud whistle
Sienna Ray	smoke pellet	jet pack	left handed	spiky hair	water splash
Piper Blake	sonic whistle	night goggles	left handed	silver hair	loud whistle
Harper Vance	glider wings	night goggles	left handed	silver hair	water splash
Sammy Stone	glider wings	stilt boots	left handed	silver hair	bright flash
Felix Vance	grappling hook	night goggles	left handed	braided hair	loud whistle

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CLUE 1 Fractions of a number

> A shredded jungle map was found near the altar. Piecing together a fraction of the map grid reveals the first clue.

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

T																		T	
17	28	29	11	27	40	40	19	27	25	26	10	29	8	25	10	17			
3	29	19	30	35	19	34	34	40	10	11	29	8							

1/3 of 51 = ☐ → T

3/6 of 68 = ☐ → G

1/2 of 38 = ☐ → A

4/10 of 70 = ☐ → H

7/10 of 50 = ☐ → M

1/3 of 30 = ☐ → O

1/3 of 33 = ☐ → V

1/4 of 116 = ☐ → E

8/10 of 50 = ☐ → L

2/4 of 52 = ☐ → D

4/8 of 54 = ☐ → I

2/4 of 60 = ☐ → R

1/6 of 150 = ☐ → N

2/5 of 20 = ☐ → S

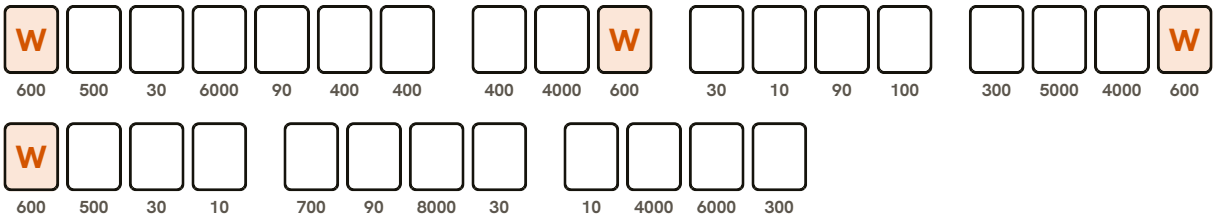
4/8 of 6 = ☐ → W

Scratch space:

CLUE 2 Place value

The vault keypad locked up after the break in. Working out the place values on the digital screen unlocks a secret note.

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



What is the value of the 6 in 85,683? ☐ → W

What is the value of the 8 in 578,147? ☐ → F

What is the value of the 5 in 26,580? ☐ → I

What is the value of the 1 in 29,214? ☐ → H

What is the value of the 1 in 376,109? ☐ → M

What is the value of the 3 in 20,731? ☐ → T

What is the value of the 4 in 58,451? ☐ → S

What is the value of the 6 in 886,899? ☐ → N

What is the value of the 5 in 485,271? ☐ → R

What is the value of the 3 in 605,327? ☐ → D

What is the value of the 4 in 264,092? ☐ → A

What is the value of the 7 in 544,744? ☐ → L

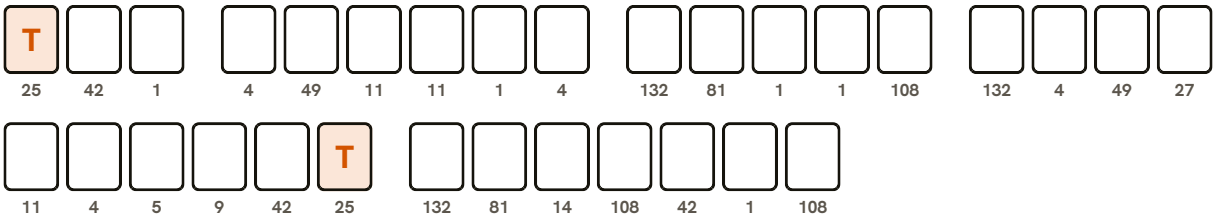
What is the value of the 9 in 68,190? ☐ → E

Scratch space:

CLUE 3 Multiplication facts (1-12)

> The villain left tracks across several rows of stone tiles. Multiplying the tiles in each grid row uncovers clear evidence.

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



5 × 5 = ☐ → T	9 × 9 = ☐ → L	1 × 1 = ☐ → E	7 × 2 = ☐ → A
9 × 1 = ☐ → G	9 × 12 = ☐ → S	11 × 1 = ☐ → B	
2 × 2 = ☐ → R	3 × 9 = ☐ → M	12 × 11 = ☐ → F	
1 × 5 = ☐ → I	7 × 6 = ☐ → H	7 × 7 = ☐ → O	

Scratch space:

CLUE 4 Word problems

> The head curator left inventory logs from the expedition. Solving the supply word problem uncovers a hidden witness statement.

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

A strand of | S | | | | | | | A | | | hair turned up at the scene.

11	9	62	15	14	32	38		9	32

There were 27 golden coin. 16 were used up. How many golden coin are left?

Answer: ☐ → **S**

Senior Explorer lined up 5 rows of 3 jungle map. How many jungle map in all?

Answer: ☐ → **V**

There were 93 ancient compass. 31 were used up. How many ancient compass are left?

Answer: ☐ → **L**

Senior Explorer found 5 bronze idol yesterday and 33 more today. How many bronze idol in all?

Answer: ☐ → **H**

Senior Explorer lined up 2 rows of 7 bronze idol. How many bronze idol in all?

Answer: ☐ → **E**

There were 42 ruby crystal. 33 were used up. How many ruby crystal are left?

Answer: ☐ → **I**

There were 40 golden coin. 8 were used up. How many golden coin are left?

Answer: ☐ → **R**

Scratch space:

CLUE 5 Fractions of a number - the last clue

> The team found a broken crystal lens that splits light into equal parts. Calculating a fraction of the light rays decodes the final clue.

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:

4/8 of 4 = ☐	1/2 of 16 = ☐	1/4 of 28 = ☐	1/8 of 24 = ☐
2/5 of 10 = ☐	3/6 of 2 = ☐	1/3 of 15 = ☐	1/6 of 36 = ☐
1/2 of 20 = ☐	5/10 of 18 = ☐	2/10 of 60 = ☐	

Step 2 - cross out the sentence with each answer:

1. The villain swung across the canyon with a grappling hook, then stepped over the tripwires using stilt boots.
2. The villain shattered the alarm glass with a sonic whistle, then spotted the target using night goggles.
3. The villain escaped through the fog using a smoke pellet, then stepped over the tripwires using stilt boots.
4. The villain escaped through the fog using a smoke pellet, then scaled the tall stone wall using mag gloves.
5. The villain soared over the jungle canopy with glider wings, then zoomed across the treetops on a jet pack.
6. The villain escaped through the fog using a smoke pellet, then faded into the shadows under a camo cloak.
7. The villain soared over the jungle canopy with glider wings, then stepped over the tripwires using stilt boots.
8. The villain swung across the canyon with a grappling hook, then zoomed across the treetops on a jet pack.
9. The villain escaped through the fog using a smoke pellet, then zoomed across the treetops on a jet pack.
10. The villain melted the lock using a laser torch, then faded into the shadows under a camo cloak.
11. The villain soared over the jungle canopy with glider wings, then faded into the shadows under a camo cloak.
12. The villain swung across the canyon with a grappling hook, then scaled the tall stone wall using mag gloves.

TEACHER / PARENT

Answer Key

The Case of the Missing Sun Gem

Culprit: Tess Montgomery

glider wings · camo cloak · left handed · silver hair · bright flash

Trail: Start 21 → Clue 1 19 → Clue 2 12 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE VILLAIN DOES NOT WEAR MAG GLOVES"

1/3 of 51 = 17 (T) · 3/6 of 68 = 34 (G) · 1/2 of 38 = 19 (A) · 4/10 of 70 = 28 (H) · 7/10 of 50 = 35 (M) · 1/3 of 30 = 10 (O) · 1/3 of 33 = 11 (V) · 1/4 of 116 = 29 (E) · 8/10 of 50 = 40 (L) · 2/4 of 52 = 26 (D) · 4/8 of 54 = 27 (I) · 2/4 of 60 = 30 (R) · 1/6 of 150 = 25 (N) · 2/5 of 20 = 8 (S) · 4/8 of 6 = 3 (W)

Clue 2 (Place value): "WITNESS SAW THEM DRAW WITH LEFT HAND"

What is the value of the 6 in 85,683? = 600 (W) · What is the value of the 8 in 578,147? = 8000 (F) · What is the value of the 5 in 26,580? = 500 (I) · What is the value of the 1 in 29,214? = 10 (H) · What is the value of the 1 in 376,109? = 100 (M) · What is the value of the 3 in 20,731? = 30 (T) · What is the value of the 4 in 58,451? = 400 (S) · What is the value of the 6 in 886,899? = 6000 (N) · What is the value of the 5 in 485,271? = 5000 (R) · What is the value of the 3 in 605,327? = 300 (D) · What is the value of the 4 in 264,092? = 4000 (A) · What is the value of the 7 in 544,744? = 700 (L) · What is the value of the 9 in 68,190? = 90 (E)

Clue 3 (Multiplication facts (1-12)): "THE ROBBER FLEES FROM BRIGHT FLASHES"

5 × 5 = 25 (T) · 9 × 9 = 81 (L) · 1 × 1 = 1 (E) · 7 × 2 = 14 (A) · 9 × 1 = 9 (G) · 9 × 12 = 108 (S) · 11 × 1 = 11 (B) · 2 × 2 = 4 (R) · 3 × 9 = 27 (M) · 12 × 11 = 132 (F) · 1 × 5 = 5 (I) · 7 × 6 = 42 (H) · 7 × 7 = 49 (O)

Clue 4 (Word problems): "SILVER HAIR"

There were 27 golden coin. 16 were used up. How many golden coin are left? = 11 (S) · Senior Explorer lined up 5 rows of 3 jungle map. How many jungle map in all? = 15 (V) · There were 93 ancient compass. 31 were used up. How many ancient compass are left? = 62 (L) · Senior Explorer found 5 bronze idol yesterday and 33 more today. How many bronze idol in all? = 38 (H) · Senior Explorer lined up 2 rows of 7 bronze idol. How many bronze idol in all? = 14 (E) · There were 42 ruby crystal. 33 were used up. How many ruby crystal are left? = 9 (I) · There were 40 golden coin. 8 were used up. How many golden coin are left? = 32 (R)

Clue 5 (Fractions of a number): surviving statement is box 11 → Tess Montgomery

4/8 of 4 = 2 · 1/2 of 16 = 8 · 1/4 of 28 = 7 · 1/8 of 24 = 3 · 2/5 of 10 = 4 · 3/6 of 2 = 1 · 1/3 of 15 = 5 · 1/6 of 36 = 6 · 1/2 of 20 = 10 · 5/10 of 18 = 9 · 2/10 of 60 = 12