



The Great Treehouse Mystery

Grade 6 math · Fractions of a number, Percentages, Exponents, Order of operations · Reading level grades 1-2

Detective: _____ Date: _____

Someone took the Golden Acorn from the Treehouse Kingdom! The chief ranger needs your help to search the high branches and find the sneaky bandit before sunset.

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 sneaky bandit is _____

Possible suspects

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

NAME	FAVORITE GEAR	BADGE EARNED	WRITING HAND	CAP COLOR	FEAR
Mia	laser flashlight	zipline flyer	writes right handed	sky blue cap	scared of the dark
Sam	laser flashlight	map reader	writes left handed	sky blue cap	scared of spiders
Amy	climbing rope	bridge builder	writes right handed	sky blue cap	scared of spiders
Roy	magnifying glass	star gazer	writes right handed	bright red cap	scared of the dark
Ida	climbing rope	camp cooker	writes left handed	bright red cap	scared of the dark
Ted	climbing rope	zipline flyer	writes left handed	bright red cap	scared of heights
Liz	climbing rope	bridge builder	writes right handed	leaf green cap	scared of spiders
Eli	climbing rope	star gazer	writes right handed	sky blue cap	scared of the dark
Fay	grappling hook	bridge builder	writes right handed	bright red cap	scared of heights
Tom	laser flashlight	zipline flyer	writes left handed	leaf green cap	scared of the dark
Zoe	climbing rope	zipline flyer	writes right handed	leaf green cap	scared of the dark
Ava	pocket compass	zipline flyer	writes right handed	bright red cap	scared of spiders
Ken	magnifying glass	star gazer	writes right handed	sky blue cap	scared of spiders
Max	pocket compass	star gazer	writes right handed	sky blue cap	scared of spiders
Ben	laser flashlight	camp cooker	writes right handed	sky blue cap	scared of spiders
Dan	pocket compass	star gazer	writes left handed	sky blue cap	scared of spiders
Joy	climbing rope	map reader	writes left handed	bright red cap	scared of spiders
Meg	grappling hook	star gazer	writes right handed	leaf green cap	scared of heights
Ned	grappling hook	zipline flyer	writes right handed	leaf green cap	scared of spiders
Abe	climbing rope	bridge builder	writes right handed	leaf green cap	scared of heights
Leo	pocket compass	map reader	writes right handed	sky blue cap	scared of spiders

CLUE 1
Fractions of a number

We need to split the rescue rope. We must cut off a fraction of the long rope to help us climb down.

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

T									T									T
29	20	25	15	32	14	35	31	29	35	6	25	21	14	6	29			

									T									
4	6	6	13	4	32	18	7	6	9	29	8	6	6	35				

$2/10 \text{ of } 145 = \square \rightarrow \text{ T }$

$2/3 \text{ of } 27 = \square \rightarrow \text{ M }$

$4/10 \text{ of } 35 = \square \rightarrow \text{ N }$

$1/4 \text{ of } 140 = \square \rightarrow \text{ D }$

$1/3 \text{ of } 12 = \square \rightarrow \text{ C }$

$1/2 \text{ of } 14 = \square \rightarrow \text{ P }$

$5/10 \text{ of } 42 = \square \rightarrow \text{ S }$

$1/5 \text{ of } 155 = \square \rightarrow \text{ I }$

$1/5 \text{ of } 45 = \square \rightarrow \text{ U }$

$1/2 \text{ of } 30 = \square \rightarrow \text{ B }$

$2/10 \text{ of } 100 = \square \rightarrow \text{ H }$

$1/4 \text{ of } 52 = \square \rightarrow \text{ K }$

$1/4 \text{ of } 100 = \square \rightarrow \text{ E }$

$2/4 \text{ of } 12 = \square \rightarrow \text{ O }$

$1/5 \text{ of } 160 = \square \rightarrow \text{ A }$

$3/6 \text{ of } 16 = \square \rightarrow \text{ F }$

Scratch space:

CLUE 2 Percentages

Our flashlight battery is low. The screen shows the percentage of power left. Let us check it now.

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

T									T									
6	39	27	3	8	5	4	18	6	30	21	27	21	6	39	27	18	10	

				T					T					T	
10	18	17	39	6	39	8	5	4	6	33	19	10	18	6	27

$10\% \text{ of } 60 = \square \rightarrow \boxed{\text{T}}$

$25\% \text{ of } 16 = \square \rightarrow \boxed{\text{D}}$

$75\% \text{ of } 28 = \square \rightarrow \boxed{\text{S}}$

$50\% \text{ of } 60 = \square \rightarrow \boxed{\text{U}}$

$20\% \text{ of } 90 = \square \rightarrow \boxed{\text{I}}$

$10\% \text{ of } 100 = \square \rightarrow \boxed{\text{R}}$

$5\% \text{ of } 100 = \square \rightarrow \boxed{\text{N}}$

$20\% \text{ of } 95 = \square \rightarrow \boxed{\text{W}}$

$5\% \text{ of } 660 = \square \rightarrow \boxed{\text{O}}$

$20\% \text{ of } 135 = \square \rightarrow \boxed{\text{E}}$

$40\% \text{ of } 20 = \square \rightarrow \boxed{\text{A}}$

$10\% \text{ of } 170 = \square \rightarrow \boxed{\text{G}}$

$10\% \text{ of } 30 = \square \rightarrow \boxed{\text{B}}$

$50\% \text{ of } 78 = \square \rightarrow \boxed{\text{H}}$

Scratch space:

CLUE 3 Exponents

The sneaky bandit left a box. The box has rows of locked buttons. The buttons multiply in blocks.

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

T									T											T
289	8	400	49	343	361	64	81	289	196	121	324	400	343	225	196	343	289			

T											
289	81	361	256	196	216	81	64	400	324	196	

$17^2 = \square \rightarrow$ T	$18^2 = \square \rightarrow$ R	$4^3 = \square \rightarrow$ D	$15^2 = \square \rightarrow$ M
$14^2 = \square \rightarrow$ S	$19^2 = \square \rightarrow$ N	$2^3 = \square \rightarrow$ H	$6^3 = \square \rightarrow$ P
$7^2 = \square \rightarrow$ B	$11^2 = \square \rightarrow$ C	$20^2 = \square \rightarrow$ E	$16^2 = \square \rightarrow$ Y
$3^4 = \square \rightarrow$ I	$7^3 = \square \rightarrow$ A		

Scratch space:

CLUE 4
Order of operations

To unlock the secret wooden gate, we must push the buttons in the right order. Follow the steps carefully.

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

T											T						
25	75	51	20	18	37	7	7	51	10	25	75	76	51	24	10	20	

42	51	76	51	20	26	29	35	43	27	51	

$11 \times 3 - 8 = \square \rightarrow \text{T}$

$10 \times 3 - 10 = \square \rightarrow \text{S}$

$13 + 6 \times 4 = \square \rightarrow \text{I}$

$48 + 7 \times 4 = \square \rightarrow \text{R}$

$12 \times 4 - 13 = \square \rightarrow \text{B}$

$6 + 2 \times 2 = \square \rightarrow \text{D}$

$9 \times 4 - 10 = \square \rightarrow \text{K}$

$12 + 9 \times 7 = \square \rightarrow \text{H}$

$3 + 8 \times 6 = \square \rightarrow \text{E}$

$7 \times 4 - 21 = \square \rightarrow \text{P}$

$7 + 4 \times 9 = \square \rightarrow \text{L}$

$8 \times 6 - 19 = \square \rightarrow \text{Y}$

$4 \times 7 - 10 = \square \rightarrow \text{N}$

$12 + 2 \times 6 = \square \rightarrow \text{A}$

$6 \times 6 - 9 = \square \rightarrow \text{U}$

$11 \times 4 - 2 = \square \rightarrow \text{W}$

Scratch space:

CLUE 5**Fractions of a number - the last clue**

We found a map torn into small bits. We must count how many fractions of the map we have put back together.

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:

$\frac{1}{2} \text{ of } 10 = \boxed{}$

$\frac{2}{6} \text{ of } 9 = \boxed{}$

$\frac{2}{10} \text{ of } 45 = \boxed{}$

$\frac{1}{5} \text{ of } 10 = \boxed{}$

$\frac{1}{2} \text{ of } 14 = \boxed{}$

$\frac{3}{8} \text{ of } 16 = \boxed{}$

$\frac{2}{4} \text{ of } 2 = \boxed{}$

$\frac{5}{10} \text{ of } 8 = \boxed{}$

$\frac{8}{10} \text{ of } 15 = \boxed{}$

$\frac{4}{8} \text{ of } 22 = \boxed{}$

$\frac{4}{6} \text{ of } 15 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain shines a laser flashlight, then points at the North Star.
2. The villain swings on a grappling hook, then builds a wooden bridge.
3. The villain climbs up a rope, then builds a wooden bridge.
4. The villain swings on a grappling hook, then rides down the zipline.
5. The villain checks a pocket compass, then points at the North Star.
6. The villain climbs up a rope, then bakes some trail mix biscuits.
7. The villain checks a pocket compass, then rides down the zipline.
8. The villain checks a pocket compass, then examines the secret map.
9. The villain uses a magnifying glass, then points at the North Star.
10. The villain shines a laser flashlight, then rides down the zipline.
11. The villain shines a laser flashlight, then bakes some trail mix biscuits.
12. The villain shines a laser flashlight, then builds a wooden bridge.

Answer Key

The Great Treehouse Mystery

Culprit: Leo

pocket compass · map reader · writes right handed · sky blue cap · scared of spiders

Trail: Start 21 → Clue 1 19 → Clue 2 14 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE BANDIT DOES NOT COOK CAMPOUT FOOD"

$2/10$ of 145 = 29 (T) · $2/3$ of 27 = 18 (M) · $4/10$ of 35 = 14 (N) · $1/4$ of 140 = 35 (D) · $1/3$ of 12 = 4 (C) · $1/2$ of 14 = 7 (P) · $5/10$ of 42 = 21 (S) · $1/5$ of 155 = 31 (I) · $1/5$ of 45 = 9 (U) · $1/2$ of 30 = 15 (B) · $2/10$ of 100 = 20 (H) · $1/4$ of 52 = 13 (K) · $1/4$ of 100 = 25 (E) · $2/4$ of 12 = 6 (O) · $1/5$ of 160 = 32 (A) · $3/6$ of 16 = 8 (F)

Clue 2 (Percentages): "THE BANDIT USES THEIR RIGHT HAND TO WRITE"

10% of 60 = 6 (T) · 25% of 16 = 4 (D) · 75% of 28 = 21 (S) · 50% of 60 = 30 (U) · 20% of 90 = 18 (I) · 10% of 100 = 10 (R) · 5% of 100 = 5 (N) · 20% of 95 = 19 (W) · 5% of 660 = 33 (O) · 20% of 135 = 27 (E) · 40% of 20 = 8 (A) · 10% of 170 = 17 (G) · 10% of 30 = 3 (B) · 50% of 78 = 39 (H)

Clue 3 (Exponents): "THE BANDIT SCREAMS AT TINY SPIDERS"

$17^2 = 289$ (T) · $18^2 = 324$ (R) · $4^3 = 64$ (D) · $15^2 = 225$ (M) · $14^2 = 196$ (S) · $19^2 = 361$ (N) · $2^3 = 8$ (H) · $6^3 = 216$ (P) · $7^2 = 49$ (B) · $11^2 = 121$ (C) · $20^2 = 400$ (E) · $16^2 = 256$ (Y) · $3^4 = 81$ (I) · $7^3 = 343$ (A)

Clue 4 (Order of operations): "THE SNIPPED THREADS WERE SKY BLUE"

$11 \times 3 - 8 = 25$ (T) · $10 \times 3 - 10 = 20$ (S) · $13 + 6 \times 4 = 37$ (I) · $48 + 7 \times 4 = 76$ (R) · $12 \times 4 - 13 = 35$ (B) · $6 + 2 \times 2 = 10$ (D) · $9 \times 4 - 10 = 26$ (K) · $12 + 9 \times 7 = 75$ (H) · $3 + 8 \times 6 = 51$ (E) · $7 \times 4 - 21 = 7$ (P) · $7 + 4 \times 9 = 43$ (L) · $8 \times 6 - 19 = 29$ (Y) · $4 \times 7 - 10 = 18$ (N) · $12 + 2 \times 6 = 24$ (A) · $6 \times 6 - 9 = 27$ (U) · $11 \times 4 - 2 = 42$ (W)

Clue 5 (Fractions of a number): surviving statement is box 8 → Leo

$1/2$ of 10 = 5 · $2/6$ of 9 = 3 · $2/10$ of 45 = 9 · $1/5$ of 10 = 2 · $1/2$ of 14 = 7 · $3/8$ of 16 = 6 · $2/4$ of 2 = 1 · $5/10$ of 8 = 4 · $8/10$ of 15 = 12 · $4/8$ of 22 = 11 · $4/6$ of 15 = 10