



The Great Treehouse Heist

Grade 6 math · Percentages, Exponents, Order of operations, Multiplication, Division · Reading level grades 3-4

Detective: _____ **Date:** _____

The legendary Golden Acorn Map has been stolen from the high branches of the Canopy Kingdom! The Chief Archivist needs your help. We must track down the sneaky Sky Bandit before they escape in their glider.

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 Sky Bandit is _____

Possible suspects

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

NAME	SPECIAL GEAR	SIDE TOOL	DOMINANT HAND	HEADGEAR	DISTRACTION
Link	jetpack boots	spy binoculars	left-handed	green visor	sweet maple sap
Amelia	bounce shoes	grappling hook	left-handed	green visor	crunchy acorns
Sonic	jetpack boots	map decoder	right-handed	green visor	sweet maple sap
Indiana	propeller hat	glowing compass	left-handed	red helmet	sweet maple sap
Tails	propeller hat	glowing compass	right-handed	blue goggles	sweet maple sap
Zelda	propeller hat	glowing compass	right-handed	red helmet	sweet maple sap
Mario	bounce shoes	spy binoculars	right-handed	red helmet	crunchy acorns
Arthur	vine zipline	glowing compass	right-handed	blue goggles	crunchy acorns
Finn	vine zipline	map decoder	right-handed	blue goggles	sweet maple sap
Dora	bounce shoes	smoke bombs	right-handed	red helmet	sweet maple sap
Samus	wind glider	smoke bombs	right-handed	red helmet	sweet maple sap
Sora	vine zipline	grappling hook	right-handed	blue goggles	sweet maple sap
Amy	jetpack boots	spy binoculars	right-handed	green visor	crunchy acorns
Lara	wind glider	smoke bombs	right-handed	green visor	shiny gold coins
Jake	bounce shoes	spy binoculars	right-handed	green visor	shiny gold coins
Diego	propeller hat	map decoder	right-handed	blue goggles	sweet maple sap
Luigi	propeller hat	glowing compass	right-handed	blue goggles	crunchy acorns
Robin	propeller hat	grappling hook	right-handed	blue goggles	shiny gold coins
Wendy	jetpack boots	map decoder	left-handed	blue goggles	sweet maple sap
Marco	wind glider	glowing compass	right-handed	blue goggles	sweet maple sap
Aladdin	bounce shoes	grappling hook	right-handed	green visor	sweet maple sap

CLUE 1 Percentages

We found a broken tablet on the floor. It shows how much of the map files are decoded in percents. Solve this to unlock the first clue!

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

T																T
14	34	45	33	38	21	21	42	38	28	25	31	45	15	28	31	14
22	15	45	42	8	18	42	19	19	21	38	28	8	34	31	31	30

$40\% \text{ of } 35 = \square \rightarrow \text{ T }$

$40\% \text{ of } 85 = \square \rightarrow \text{ H }$

$10\% \text{ of } 220 = \square \rightarrow \text{ U }$

$50\% \text{ of } 16 = \square \rightarrow \text{ G }$

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

$40\% \text{ of } 70 = \square \rightarrow \text{ N }$

$20\% \text{ of } 125 = \square \rightarrow \text{ D }$

$75\% \text{ of } 20 = \square \rightarrow \text{ S }$

$10\% \text{ of } 330 = \square \rightarrow \text{ V }$

$20\% \text{ of } 150 = \square \rightarrow \text{ K }$

$50\% \text{ of } 84 = \square \rightarrow \text{ A }$

$50\% \text{ of } 62 = \square \rightarrow \text{ O }$

$60\% \text{ of } 30 = \square \rightarrow \text{ R }$

$40\% \text{ of } 95 = \square \rightarrow \text{ I }$

$10\% \text{ of } 190 = \square \rightarrow \text{ P }$

$75\% \text{ of } 60 = \square \rightarrow \text{ E }$

Scratch space:

CLUE 2 Exponents

The thief used a lock with a grid pattern. The power level grows by multiplying itself. Solve this math puzzle to open the security gate!

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

Diagram illustrating the decomposition of 1000 into powers of 2. The top row shows 1000 as a sum of 8, 169, 16, 343, 289, 343, 216, 16, 64, 8, 256, 196, 361, 8, 16, 343, 256, 361, 8, and 169. The bottom row shows 1000 as a sum of 8, 169, 16, 361, 196, 196, 361, 36, 169, 8, 169, 81, 144, and 225. The 'T' boxes represent the target value 1000.

$$6^3 = \boxed{} \rightarrow \boxed{\text{P}}$$

$8^2 = \boxed{} \rightarrow \boxed{\text{C}}$

$$13^2 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$12^2 = \boxed{} \rightarrow \boxed{\mathbf{N}}$$

Scratch space:

CLUE 3

Order of operations

To activate the tree elevator, we must follow the strict rules of operations. Solve this multi-step code to reach the next branch!

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

T																			
52	21	77	42	43	70	70	59	43	37	46	52	11	48	46	10	11	47		
				T															
46	73	77	77	52	67	59	48	70	77	46	59	48							

$8 \times 10 - 28 = \square \rightarrow \boxed{\text{T}}$

$1 + 7 \times 6 = \square \rightarrow \boxed{\text{I}}$

$6 \times 8 - 2 = \square \rightarrow \boxed{\text{S}}$

$3 \times 9 - 17 = \square \rightarrow \boxed{\text{F}}$

$34 + 6 \times 6 = \square \rightarrow \boxed{\text{L}}$

$37 + 9 \times 4 = \square \rightarrow \boxed{\text{W}}$

$42 + 7 \times 5 = \square \rightarrow \boxed{\text{E}}$

$2 \times 11 - 1 = \square \rightarrow \boxed{\text{H}}$

$6 + 4 \times 9 = \square \rightarrow \boxed{\text{V}}$

$5 + 3 \times 2 = \square \rightarrow \boxed{\text{O}}$

$10 \times 7 - 11 = \square \rightarrow \boxed{\text{A}}$

$8 \times 9 - 5 = \square \rightarrow \boxed{\text{M}}$

$12 \times 5 - 23 = \square \rightarrow \boxed{\text{N}}$

$11 \times 6 - 19 = \square \rightarrow \boxed{\text{R}}$

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

Scratch space:

CLUE 4
Multiplication facts (1-12)

The bandit ran past rows of supply crates. If we multiply the rows of boxes, we can find the hidden trail they took.

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

B																		
9	20	48	56	28	5	28	28	20	56	16	121	56	110	56	20	56	3	27

B															
9	56	72	35	22	88	64	27	27	72	56	16	24	56	22	56

$9 \times 1 = \square \rightarrow \text{B}$

$8 \times 11 = \square \rightarrow \text{D}$

$6 \times 8 = \square \rightarrow \text{U}$

$4 \times 4 = \square \rightarrow \text{S}$

$10 \times 2 = \square \rightarrow \text{L}$

$8 \times 7 = \square \rightarrow \text{E}$

$8 \times 8 = \square \rightarrow \text{A}$

$11 \times 2 = \square \rightarrow \text{N}$

$1 \times 5 = \square \rightarrow \text{O}$

$5 \times 7 = \square \rightarrow \text{I}$

$9 \times 3 = \square \rightarrow \text{T}$

$3 \times 1 = \square \rightarrow \text{F}$

$3 \times 8 = \square \rightarrow \text{C}$

$6 \times 12 = \square \rightarrow \text{H}$

$11 \times 11 = \square \rightarrow \text{W}$

$4 \times 7 = \square \rightarrow \text{G}$

$11 \times 10 = \square \rightarrow \text{R}$

Scratch space:

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

We have a pile of shiny tracking seeds to share equally among our team. Divide them up so we can search every path!

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:

$48 \div 6 = \boxed{}$

$10 \div 2 = \boxed{}$

$6 \div 6 = \boxed{}$

$42 \div 6 = \boxed{}$

$84 \div 7 = \boxed{}$

$11 \div 1 = \boxed{}$

$110 \div 11 = \boxed{}$

$16 \div 8 = \boxed{}$

$45 \div 5 = \boxed{}$

$12 \div 4 = \boxed{}$

$4 \div 1 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain slides down a vine zipline, then reads the stolen map decoder.
2. The villain zooms off using jetpack boots, then reads the stolen map decoder.
3. The villain sails away on a wind glider, then swings away on a grappling hook.
4. The villain zooms off using jetpack boots, then swings away on a grappling hook.
5. The villain flies up with a propeller hat, then checks their glowing compass.
6. The villain sails away on a wind glider, then checks their glowing compass.
7. The villain zooms off using jetpack boots, then tosses noisy smoke bombs.
8. The villain flies up with a propeller hat, then reads the stolen map decoder.
9. The villain flies up with a propeller hat, then tosses noisy smoke bombs.
10. The villain leaps away with bounce shoes, then peers through spy binoculars.
11. The villain slides down a vine zipline, then checks their glowing compass.
12. The villain sails away on a wind glider, then reads the stolen map decoder.

Answer Key

The Great Treehouse Heist

Culprit: Marco

wind glider · glowing compass · right-handed · blue goggles · sweet maple sap

Trail: Start 21 → Clue 1 17 → Clue 2 14 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Percentages): "THE VILLAIN DOES NOT USE A GRAPPLING HOOK"

40% of 35 = 14 (T) · 40% of 85 = 34 (H) · 10% of 220 = 22 (U) · 50% of 16 = 8 (G) · 75% of 28 = 21 (L) · 40% of 70 = 28 (N) · 20% of 125 = 25 (D) · 75% of 20 = 15 (S) · 10% of 330 = 33 (V) · 20% of 150 = 30 (K) · 50% of 84 = 42 (A) · 50% of 62 = 31 (O) · 60% of 30 = 18 (R) · 40% of 95 = 38 (I) · 10% of 190 = 19 (P) · 75% of 60 = 45 (E)

Clue 2 (Exponents): "THE SUSPECT WRITES WITH THEIR RIGHT HAND"

$2^3 = 8$ (T) · $15^2 = 225$ (D) · $2^4 = 16$ (E) · $6^3 = 216$ (P) · $17^2 = 289$ (U) · $14^2 = 196$ (R) · $3^4 = 81$ (A) · $8^2 = 64$ (C) · $6^2 = 36$ (G) · $7^3 = 343$ (S) · $16^2 = 256$ (W) · $13^2 = 169$ (H) · $19^2 = 361$ (I) · $12^2 = 144$ (N)

Clue 3 (Order of operations): "THE VILLAIN STOPS FOR SWEET MAPLE SAP"

$8 \times 10 - 28 = 52$ (T) · $1 + 7 \times 6 = 43$ (I) · $6 \times 8 - 2 = 46$ (S) · $3 \times 9 - 17 = 10$ (F) · $34 + 6 \times 6 = 70$ (L) · $37 + 9 \times 4 = 73$ (W) · $42 + 7 \times 5 = 77$ (E) · $2 \times 11 - 1 = 21$ (H) · $6 + 4 \times 9 = 42$ (V) · $5 + 3 \times 2 = 11$ (O) · $10 \times 7 - 11 = 59$ (A) · $8 \times 9 - 5 = 67$ (M) · $12 \times 5 - 23 = 37$ (N) · $11 \times 6 - 19 = 47$ (R) · $9 \times 6 - 6 = 48$ (P)

Clue 4 (Multiplication facts (1-12)): "BLUE GOGGLES WERE LEFT BEHIND AT THE SCENE"

$9 \times 1 = 9$ (B) · $8 \times 11 = 88$ (D) · $6 \times 8 = 48$ (U) · $4 \times 4 = 16$ (S) · $10 \times 2 = 20$ (L) · $8 \times 7 = 56$ (E) · $8 \times 8 = 64$ (A) · $11 \times 2 = 22$ (N) · $1 \times 5 = 5$ (O) · $5 \times 7 = 35$ (I) · $9 \times 3 = 27$ (T) · $3 \times 1 = 3$ (F) · $3 \times 8 = 24$ (C) · $6 \times 12 = 72$ (H) · $11 \times 11 = 121$ (W) · $4 \times 7 = 28$ (G) · $11 \times 10 = 110$ (R)

Clue 5 (Division facts (1-12)): surviving statement is box 6 → Marco

$48 \div 6 = 8$ · $10 \div 2 = 5$ · $6 \div 6 = 1$ · $42 \div 6 = 7$ · $84 \div 7 = 12$ · $11 \div 1 = 11$ · $110 \div 11 = 10$ · $16 \div 8 = 2$ · $45 \div 5 = 9$ · $12 \div 4 = 3$ · $4 \div 1 = 4$