



The Great Treehouse Mystery

Grade 2 math · Addition, Skip counting, Bar models, Place value, Missing addends · Reading level grades 1-2

Detective: _____ Date: _____

Someone took the golden compass from the big treehouse! The camp leader needs your help. Look for clues to find the sneaky map 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 sneaky map thief is _____

Possible suspects

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

NAME	FAVORITE TOOL	BADGE COLOR	HOLDING HAND	HAT COLOR	SCARED OF
Abby	pocket flashlight	yellow badge	right handed	blue hat	fake spiders
Ruby	magnifying glass	blue badge	left handed	green hat	fake spiders
Leo	mini binoculars	green badge	right handed	blue hat	loud whistles
Owen	pocket flashlight	blue badge	left handed	blue hat	fake spiders
Oliver	pocket flashlight	blue badge	right handed	green hat	muddy puddles
Hazel	mini binoculars	orange badge	right handed	blue hat	loud whistles
Max	mini binoculars	orange badge	right handed	blue hat	fake spiders
Mason	toy walkie talkie	orange badge	left handed	red hat	fake spiders
Luke	mini binoculars	blue badge	right handed	red hat	fake spiders
Sam	pocket flashlight	blue badge	right handed	blue hat	loud whistles
Zoe	toy walkie talkie	orange badge	right handed	green hat	muddy puddles
Grace	pocket flashlight	red badge	left handed	green hat	fake spiders
Mia	magnifying glass	blue badge	right handed	blue hat	fake spiders
Ella	mini binoculars	blue badge	left handed	red hat	muddy puddles
Jake	magnifying glass	green badge	right handed	blue hat	fake spiders
Ben	toy walkie talkie	orange badge	right handed	green hat	loud whistles
Carter	mini binoculars	green badge	left handed	green hat	muddy puddles
Sophia	toy walkie talkie	green badge	right handed	blue hat	fake spiders
Emma	pocket flashlight	blue badge	left handed	red hat	fake spiders
Toby	mini binoculars	orange badge	right handed	red hat	loud whistles
Lily	mini binoculars	green badge	left handed	blue hat	muddy puddles

CLUE 1 Addition

We count the trail markers on the path. Let us add them up to find the first clue.

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

T			T											T				
84	82	39	84	82	43	39	22	24	49	39	21	47	49	84	94	39	88	28

T													
84	82	39	49	28	88	47	57	39	65	88	24	57	39

$33 + 51 = \square \rightarrow$ T	$41 + 41 = \square \rightarrow$ H	$9 + 12 = \square \rightarrow$ S
$43 + 22 = \square \rightarrow$ B	$17 + 7 = \square \rightarrow$ D	$63 + 31 = \square \rightarrow$ W
$23 + 24 = \square \rightarrow$ N	$37 + 20 = \square \rightarrow$ G	$15 + 13 = \square \rightarrow$ R
$44 + 44 = \square \rightarrow$ A	$11 + 11 = \square \rightarrow$ F	$32 + 17 = \square \rightarrow$ O
$22 + 17 = \square \rightarrow$ E	$28 + 15 = \square \rightarrow$ I	

Scratch space:

CLUE 2 Skip counting

We jump along the numbered logs. Let us count by twos to read the sign.

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

T						T					T					T	
39	50	21	15	14	6	39	22	16	35	35	39	70	90	65	80	39	6
						T		T								T	
120	21	36	80	21	15	39	35	39	50	21	90	65	110	50	39		

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, __, 42, 45 → **T**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, __, 100, 110 → **R**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 → **U**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, __, 40, 45 → **O**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 → **I**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, __, 18, 20 → **F**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 → **L**

Skip-count by 5s. Fill the blank: 5, 10, __, 20, 25 → **D**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, __, 120, 130 → **G**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, __, 24, 26 → **Y**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, __, 75, 80 → **P**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 → **A**

Skip-count by 2s. Fill the blank: 2, 4, __, 8, 10 → **S**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, __, 90, 100 → **N**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, __, 24, 27 → **E**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, __, 60, 70 → **H**

Scratch space:

CLUE 3

Bar model word problems

The ropes have different lengths. We can compare them side by side to see a hint.

Draw a bar model to solve each word problem, then write its letter in the boxes to fill in the missing word.

Someone scared the villain off with F D R .

33 46 28 44 56 19 13 44 56

The red team has 34 trail snacks and the blue team has 1 trail snacks. How many more trail snacks does the red team have?

draw a bar model

Answer: → F

The red team has 56 shiny acorns and the blue team has 12 shiny acorns. How many more shiny acorns does the red team have?

draw a bar model

Answer: → E

There were 36 shiny acorns in all. 8 shiny acorns were used. How many shiny acorns are left?

draw a bar model

Answer: → K

There were 22 trail snacks in all. 9 trail snacks were used. How many trail snacks are left?

draw a bar model

Answer: → I

One group collected 13 pine cones and another group collected 6 pine cones. How many pine cones in all?

draw a bar model

Answer: → P

One group collected 43 toy binoculars and another group collected 13 toy binoculars. How many toy binoculars in all?

draw a bar model

Answer: → S

There were 52 pine cones in all. 6 pine cones were used. How many pine cones are left?

draw a bar model

Answer: → A

CLUE 4 Place value

We find a lock box with two digit wheels. We need to check the tens and ones.

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

A														A		
33	46	88	25	59	64	17	46	19	50	67	17	64	88	67	33	89

	A							A					
98	33	30	78	55	17	64	67	46	88	33	55	90	64

What number has 3 tens and 3 ones? → **A**

What number has 1 ten and 9 ones? → **L**

What number has 1 ten and 7 ones? → **T**

What number has 6 tens and 4 ones? → **H**

What number has 7 tens and 8 ones? → **O**

What number has 9 tens and 8 ones? → **W**

What number has 5 tens and 9 ones? → **G**

What number has 5 tens and 0 ones? → **U**

What number has 9 tens and 0 ones? → **C**

What number has 6 tens and 7 ones? → **E**

What number has 3 tens and 0 ones? → **S**

What number has 5 tens and 5 ones? → **N**

What number has 2 tens and 5 ones? → **I**

What number has 8 tens and 8 ones? → **R**

What number has 4 tens and 6 ones? → **B**

What number has 8 tens and 9 ones? → **D**

Scratch space:

CLUE 5**Missing addends - the last clue**

Some map pieces are missing. We must find the missing parts to solve the mystery.

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:

$5 + \underline{\quad} = 6$

$2 + \underline{\quad} = 10$

$8 + \underline{\quad} = 10$

$2 + \underline{\quad} = 6$

$1 + \underline{\quad} = 7$

$2 + \underline{\quad} = 9$

$6 + \underline{\quad} = 15$

$3 + \underline{\quad} = 6$

$8 + \underline{\quad} = 19$

$3 + \underline{\quad} = 13$

$5 + \underline{\quad} = 10$

Step 2 - cross out the sentence with each answer:

1. The villain climbed up the rope ladder, then ducked under the picnic table.
2. The villain slid down the zip line, then escaped toward the secret cave.
3. The villain climbed up the rope ladder, then jumped into the big sandbox.
4. The villain crept across the wooden bridge, then escaped toward the secret cave.
5. The villain slid down the zip line, then hid behind the giant oak tree.
6. The villain hopped over the stepping stones, then hid behind the giant oak tree.
7. The villain crept across the wooden bridge, then jumped into the big sandbox.
8. The villain climbed up the rope ladder, then ran into the leafy bushes.
9. The villain hopped over the stepping stones, then ducked under the picnic table.
10. The villain sneaked past the main gate, then jumped into the big sandbox.
11. The villain crept across the wooden bridge, then ran into the leafy bushes.
12. The villain crept across the wooden bridge, then ducked under the picnic table.

Answer Key

The Great Treehouse Mystery

Culprit: Sophia

toy walkie talkie · green badge · right handed · blue hat · fake spiders

Trail: Start 21 → Clue 1 15 → Clue 2 8 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE THIEF DOES NOT WEAR THE ORANGE BADGE"

$33 + 51 = 84$ (T) · $41 + 41 = 82$ (H) · $9 + 12 = 21$ (S) · $43 + 22 = 65$ (B) · $17 + 7 = 24$ (D) · $63 + 31 = 94$ (W) · $23 + 24 = 47$ (N) · $37 + 20 = 57$ (G) · $15 + 13 = 28$ (R) · $44 + 44 = 88$ (A) · $11 + 11 = 22$ (F) · $32 + 17 = 49$ (O) · $22 + 17 = 39$ (E) · $28 + 15 = 43$ (I)

Clue 2 (Skip counting): "THE DUSTY FOOTPRINTS LEANED TO THE RIGHT"

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, __, 42, 45 = 39 (T) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, __, 100, 110 = 90 (R) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 = 14 (U) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, __, 40, 45 = 35 (O) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 = 65 (I) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, __, 18, 20 = 16 (F) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, __, 130, 140 = 120 (L) · Skip-count by 5s. Fill the blank: 5, 10, __, 20, 25 = 15 (D) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, __, 120, 130 = 110 (G) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, __, 24, 26 = 22 (Y) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, __, 75, 80 = 70 (P) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 = 36 (A) · Skip-count by 2s. Fill the blank: 2, 4, __, 8, 10 = 6 (S) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, __, 90, 100 = 80 (N) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, __, 24, 27 = 21 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, __, 60, 70 = 50 (H)

Clue 3 (Bar model word problems): "FAKE SPIDERS"

The red team has 34 trail snacks and the blue team has 1 trail snacks. How many more trail snacks does the red team have? = 33 (F) · The red team has 56 shiny acorns and the blue team has 12 shiny acorns. How many more shiny acorns does the red team have? = 44 (E) · There were 36 shiny acorns in all. 8 shiny acorns were used. How many shiny acorns are left? = 28 (K) · There were 22 trail snacks in all. 9 trail snacks were used. How many trail snacks are left? = 13 (I) · One group collected 13 pine cones and another group collected 6 pine cones. How many pine cones in all? = 19 (P) · One group collected 43 toy binoculars and another group collected 13 toy binoculars. How many toy binoculars in all? = 56 (S) · There were 52 pine cones in all. 6 pine cones were used. How many pine cones are left? = 46 (A)

Clue 4 (Place value): "A BRIGHT BLUE THREAD WAS ON THE BRANCH"

What number has 3 tens and 3 ones? = 33 (A) · What number has 1 ten and 9 ones? = 19 (L) · What number has 1 ten and 7 ones? = 17 (T) · What number has 6 tens and 4 ones? = 64 (H) · What number has 7 tens and 8 ones? = 78 (O) · What number has 9 tens and 8 ones? = 98 (W) · What number has 5 tens and 9 ones? = 59 (G) · What number has 5 tens and 0 ones? = 50 (U) · What number has 9 tens and 0 ones? = 90 (C) · What number has 6 tens and 7 ones? = 67 (E) · What number has 3 tens and 0 ones? = 30 (S) · What number has 5 tens and 5 ones? = 55 (N) · What number has 2 tens and 5 ones? = 25 (I) · What number has 8 tens and 8 ones? = 88 (R) · What number has 4 tens and 6 ones? = 46 (B) · What number has 8 tens and 9 ones? = 89 (D)

Clue 5 (Missing addends): surviving statement is box 12 → Sophia

$5 + \underline{\quad} = 6 = 1$ · $2 + \underline{\quad} = 10 = 8$ · $8 + \underline{\quad} = 10 = 2$ · $2 + \underline{\quad} = 6 = 4$ · $1 + \underline{\quad} = 7 = 6$ · $2 + \underline{\quad} = 9 = 7$ · $6 + \underline{\quad} = 15 = 9$ · $3 + \underline{\quad} = 6 = 3$ · $8 + \underline{\quad} = 19 = 11$ · $3 + \underline{\quad} = 13 = 10$ · $5 + \underline{\quad} = 10 = 5$