

# The Great Treehouse Mystery

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

Detective: \_\_\_\_\_ Date: \_\_\_\_\_

Someone took the Golden Compass from our secret treehouse! We must follow the trail, solve the clues, and find the sneaky Prankster before the sun goes down. Ready, team? Let us solve this mystery!

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 Prankster is** \_\_\_\_\_

## Possible suspects

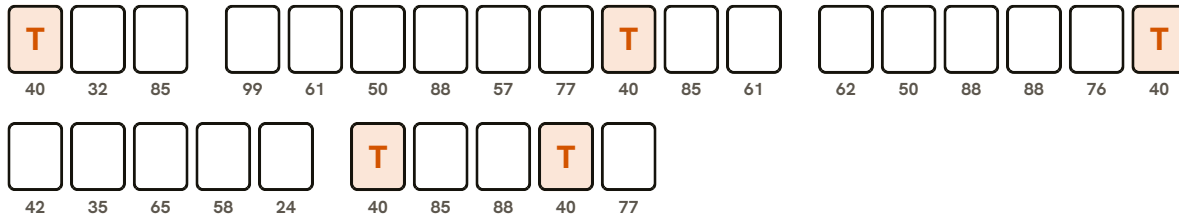
Cross off a row as each clue rules it out. The one left at the end is the culprit.

| NAME | EXPLORER SKILL | SPECIAL TALENT | WRITING HAND | HAIR COLOR  | BIGGEST FEAR    |
|------|----------------|----------------|--------------|-------------|-----------------|
| Emma | map reader     | tent builder   | right handed | black hair  | scared of bugs  |
| Rex  | tree climber   | berry finder   | right handed | blonde hair | scared of frogs |
| Zoe  | map reader     | star gazer     | left handed  | brown hair  | scared of bugs  |
| Leo  | night watcher  | berry finder   | left handed  | blonde hair | scared of frogs |
| Jake | night watcher  | bridge maker   | right handed | blonde hair | scared of mud   |
| Zack | trail runner   | star gazer     | right handed | black hair  | scared of mud   |
| Max  | tree climber   | berry finder   | right handed | brown hair  | scared of frogs |
| Abby | map reader     | tent builder   | left handed  | blonde hair | scared of mud   |
| Ruby | tree climber   | animal caller  | right handed | blonde hair | scared of frogs |
| Nora | tree climber   | berry finder   | left handed  | blonde hair | scared of bugs  |
| Eli  | trail runner   | animal caller  | right handed | brown hair  | scared of bugs  |
| Dan  | trail runner   | berry finder   | right handed | blonde hair | scared of frogs |
| Toby | tree climber   | bridge maker   | right handed | blonde hair | scared of mud   |
| Cole | tree climber   | star gazer     | left handed  | black hair  | scared of mud   |
| Ben  | trail runner   | star gazer     | right handed | brown hair  | scared of mud   |
| Amy  | map reader     | star gazer     | right handed | black hair  | scared of mud   |
| Luke | trail runner   | bridge maker   | right handed | blonde hair | scared of frogs |
| Finn | rope glider    | star gazer     | right handed | black hair  | scared of frogs |
| Ava  | rope glider    | tent builder   | left handed  | black hair  | scared of frogs |
| Lily | trail runner   | tent builder   | right handed | blonde hair | scared of frogs |
| Mia  | map reader     | bridge maker   | right handed | brown hair  | scared of frogs |

## CLUE 1 Place value

We found a wooden safe. It has digit keys for tens and ones. Count the base ten blocks to unlock it.

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



What number has 4 tens and 0 ones?  → **T**

What number has 6 tens and 2 ones?  → **C**

What number has 7 tens and 7 ones?  → **S**

What number has 9 tens and 9 ones?  → **P**

What number has 3 tens and 2 ones?  → **H**

What number has 5 tens and 8 ones?  → **L**

What number has 3 tens and 5 ones?  → **U**

What number has 6 tens and 1 one?  → **R**

What number has 2 tens and 4 ones?  → **D**

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

What number has 5 tens and 7 ones?  → **K**

What number has 8 tens and 5 ones?  → **E**

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

What number has 4 tens and 2 ones?  → **B**

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

What number has 6 tens and 5 ones?  → **I**

Scratch space:

## CLUE 2 Addition

We must pack our gear. We put some flashlights and rope in our bags. Add them up to get the total.

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

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| T  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 94 | 71 | 76 | 53 | 78 | 51 | 76 | 61 | 89 | 76 | 70 | 76 | 55 | 80 | 51 | 30 | 36 | 80 | 30 |

|    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| T  |    |    |    |    |    | T  |    |    |    |    |    |
| 94 | 71 | 76 | 70 | 97 | 28 | 71 | 94 | 61 | 97 | 36 | 76 |

|                                   |                                   |                                   |
|-----------------------------------|-----------------------------------|-----------------------------------|
| $33 + 61 = \square \rightarrow$ T | $28 + 42 = \square \rightarrow$ R | $26 + 27 = \square \rightarrow$ C |
| $46 + 30 = \square \rightarrow$ E | $38 + 17 = \square \rightarrow$ F | $13 + 17 = \square \rightarrow$ N |
| $26 + 54 = \square \rightarrow$ O | $59 + 30 = \square \rightarrow$ W | $15 + 21 = \square \rightarrow$ D |
| $27 + 34 = \square \rightarrow$ S | $36 + 42 = \square \rightarrow$ L | $42 + 29 = \square \rightarrow$ H |
| $30 + 67 = \square \rightarrow$ I | $27 + 24 = \square \rightarrow$ U | $16 + 12 = \square \rightarrow$ G |

Scratch space:

## CLUE 3

## Subtraction

The thief took some items. We had ten maps but some are gone. Subtract to find the missing maps.

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

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| W  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 83 | 37 | 39 | 31 | 40 | 79 | 23 | 39 | 13 | 31 | 65 | 27 | 13 | 14 | 32 | 12 | 16 |

|    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|
|    |    |    |    |    |    |    |    |    |    |    |    |    |
| 79 | 37 | 14 | 13 | 27 | 15 | 37 | 37 | 16 | 32 | 14 | 67 | 37 |

$119 - 36 = \square \rightarrow \boxed{\text{W}}$

$28 - 1 = \square \rightarrow \boxed{\text{T}}$

$60 - 21 = \square \rightarrow \boxed{\text{F}}$

$37 - 6 = \square \rightarrow \boxed{\text{O}}$

$47 - 34 = \square \rightarrow \boxed{\text{R}}$

$27 - 13 = \square \rightarrow \boxed{\text{A}}$

$39 - 27 = \square \rightarrow \boxed{\text{K}}$

$46 - 14 = \square \rightarrow \boxed{\text{C}}$

$28 - 13 = \square \rightarrow \boxed{\text{H}}$

$46 - 9 = \square \rightarrow \boxed{\text{E}}$

$69 - 2 = \square \rightarrow \boxed{\text{P}}$

$82 - 3 = \square \rightarrow \boxed{\text{N}}$

$17 - 1 = \square \rightarrow \boxed{\text{S}}$

$101 - 36 = \square \rightarrow \boxed{\text{G}}$

$66 - 26 = \square \rightarrow \boxed{\text{U}}$

$48 - 25 = \square \rightarrow \boxed{\text{D}}$

Scratch space:

## CLUE 4 Skip counting

The wooden path has steps. We must jump by twos to stay safe. Skip count to the end of the path.

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

|    |    |    |    |     |     |    |    |    |    |    |   |     |    |    |    |    |    |   |  |
|----|----|----|----|-----|-----|----|----|----|----|----|---|-----|----|----|----|----|----|---|--|
| A  |    |    |    |     |     |    |    |    |    |    |   |     |    |    |    |    |    |   |  |
| 12 | 35 | 33 | 55 | 140 | 110 | 39 | 35 | 50 | 36 | 45 | 9 | 100 | 65 | 39 | 33 | 12 | 45 | 9 |  |

|    |    |    |    |    |    |     |     |    |     |    |
|----|----|----|----|----|----|-----|-----|----|-----|----|
|    | A  |    |    |    |    |     |     |    |     |    |
| 25 | 12 | 65 | 36 | 45 | 39 | 110 | 100 | 30 | 100 | 20 |

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, \_\_, 14, 16  → **A**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, \_\_, 30, 35  → **W**

Skip-count by 10s. Fill the blank: 10, 20, \_\_, 40, 50  → **K**

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, \_\_, 150, 160  → **G**

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 3s. Fill the blank: 3, 6, \_\_, 12, 15  → **D**

Skip-count by 5s. Fill the blank: 5, 10, 15, \_\_, 25, 30  → **Y**

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, \_\_, 110, 120  → **E**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, \_\_, 36, 39  → **R**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, \_\_, 60, 70  → **L**

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, \_\_, 50, 55  → **N**

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, \_\_, 60, 65  → **I**

Scratch space:

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

We want to build a bridge. We need ten logs. We have six logs now. How many more do we need?

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:**

$10 + \underline{\quad} = 11$

$10 + \underline{\quad} = 16$

$7 + \underline{\quad} = 12$

$6 + \underline{\quad} = 9$

$6 + \underline{\quad} = 14$

$2 + \underline{\quad} = 14$

$5 + \underline{\quad} = 7$

$2 + \underline{\quad} = 12$

$9 + \underline{\quad} = 20$

$10 + \underline{\quad} = 19$

$4 + \underline{\quad} = 8$

**Step 2 - cross out the sentence with each answer:**

1. The villain dashes through the bushes, then gathers sweet wild berries.
2. The villain climbs the big oak tree, then sets up a small camp.
3. The villain watches the dark trail, then crosses the wooden bridge.
4. The villain dashes through the bushes, then sets up a small camp.
5. The villain dashes through the bushes, then crosses the wooden bridge.
6. The villain climbs the big oak tree, then gathers sweet wild berries.
7. The villain climbs the big oak tree, then makes a loud bird call.
8. The villain checks the old trail map, then points up at the big dipper.
9. The villain zips down the rope, then gathers sweet wild berries.
10. The villain watches the dark trail, then points up at the big dipper.
11. The villain checks the old trail map, then sets up a small camp.
12. The villain watches the dark trail, then makes a loud bird call.

# Answer Key

## The Great Treehouse Mystery

### Culprit: Ruby

tree climber · animal caller · right handed · blonde hair · scared of frogs

Trail: Start 21 → Clue 1 17 → Clue 2 13 → Clue 3 7 → Clue 4 4 → Clue 5 1

### Clue 1 (Place value): "THE PRANKSTER CANNOT BUILD TENTS"

What number has 4 tens and 0 ones? = 40 (T) · What number has 6 tens and 2 ones? = 62 (C) · What number has 7 tens and 7 ones? = 77 (S) · What number has 9 tens and 9 ones? = 99 (P) · What number has 3 tens and 2 ones? = 32 (H) · What number has 5 tens and 8 ones? = 58 (L) · What number has 3 tens and 5 ones? = 35 (U) · What number has 6 tens and 1 one? = 61 (R) · What number has 2 tens and 4 ones? = 24 (D) · What number has 8 tens and 8 ones? = 88 (N) · What number has 5 tens and 7 ones? = 57 (K) · What number has 8 tens and 5 ones? = 85 (E) · What number has 7 tens and 6 ones? = 76 (O) · What number has 4 tens and 2 ones? = 42 (B) · What number has 5 tens and 0 ones? = 50 (A) · What number has 6 tens and 5 ones? = 65 (I)

### Clue 2 (Addition): "THE CLUES WERE FOUND ON THE RIGHT SIDE"

$33 + 61 = 94$  (T) ·  $28 + 42 = 70$  (R) ·  $26 + 27 = 53$  (C) ·  $46 + 30 = 76$  (E) ·  $38 + 17 = 55$  (F) ·  $13 + 17 = 30$  (N) ·  $26 + 54 = 80$  (O) ·  $59 + 30 = 89$  (W) ·  $15 + 21 = 36$  (D) ·  $27 + 34 = 61$  (S) ·  $36 + 42 = 78$  (L) ·  $42 + 29 = 71$  (H) ·  $30 + 67 = 97$  (I) ·  $27 + 24 = 51$  (U) ·  $16 + 12 = 28$  (G)

### Clue 3 (Subtraction): "WE FOUND FROG TRACKS NEAR THE ESCAPE"

$119 - 36 = 83$  (W) ·  $28 - 1 = 27$  (T) ·  $60 - 21 = 39$  (F) ·  $37 - 6 = 31$  (O) ·  $47 - 34 = 13$  (R) ·  $27 - 13 = 14$  (A) ·  $39 - 27 = 12$  (K) ·  $46 - 14 = 32$  (C) ·  $28 - 13 = 15$  (H) ·  $46 - 9 = 37$  (E) ·  $69 - 2 = 67$  (P) ·  $82 - 3 = 79$  (N) ·  $17 - 1 = 16$  (S) ·  $101 - 36 = 65$  (G) ·  $66 - 26 = 40$  (U) ·  $48 - 25 = 23$  (D)

### Clue 4 (Skip counting): "A BRIGHT BLONDE STRAND WAS ON THE KEY"

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, \_\_, 14, 16 = 12 (A) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, \_\_, 30, 35 = 25 (W) · Skip-count by 10s. Fill the blank: 10, 20, \_\_, 40, 50 = 30 (K) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, \_\_, 120, 130 = 110 (H) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, \_\_, 150, 160 = 140 (G) · 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 3s. Fill the blank: 3, 6, \_\_, 12, 15 = 9 (D) · Skip-count by 5s. Fill the blank: 5, 10, 15, \_\_, 25, 30 = 20 (Y) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, \_\_, 70, 75 = 65 (S) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, \_\_, 110, 120 = 100 (E) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, \_\_, 36, 39 = 33 (R) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, \_\_, 60, 70 = 50 (L) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, \_\_, 40, 45 = 35 (B) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, \_\_, 50, 55 = 45 (N) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, \_\_, 39, 42 = 36 (O) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, \_\_, 60, 65 = 55 (I)

### Clue 5 (Missing addends): surviving statement is box 7 → Ruby

$10 + \underline{\quad} = 11 = 1$  ·  $10 + \underline{\quad} = 16 = 6$  ·  $7 + \underline{\quad} = 12 = 5$  ·  $6 + \underline{\quad} = 9 = 3$  ·  $6 + \underline{\quad} = 14 = 8$  ·  $2 + \underline{\quad} = 14 = 12$  ·  $5 + \underline{\quad} = 7 = 2$  ·  $2 + \underline{\quad} = 12 = 10$  ·  $9 + \underline{\quad} = 20 = 11$  ·  $10 + \underline{\quad} = 19 = 9$  ·  $4 + \underline{\quad} = 8 = 4$