



# The Mystery of Echo Ridge

Grade 6 math · Multiplication, Multi-step word problems, Percentages, Exponents, Missing addends · Reading level grades 3-4

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

A strange power surge hit the Echo Ridge arcade and opened a portal to a shadowy dimension! A mysterious monster snatched the arcade manager and disappeared into the fog. The local radio club must track down clues to save the town.

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 Rift Monster is** \_\_\_\_\_

## Possible suspects

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

| NAME               | MAIN POWER   | EXTRA POWER   | DOMINANT HAND | HAIR STYLE | WEAKNESS          |
|--------------------|--------------|---------------|---------------|------------|-------------------|
| Nancy Wheeler      | time echo    | sound wave    | LEFT HANDED   | CURLY MESH | BRIGHT FLASHLIGHT |
| Will Byers         | portal spark | gravity flip  | RIGHT HANDED  | CURLY MESH | LOUD ROCK MUSIC   |
| Mikey Wheeler      | mind pulse   | frost touch   | RIGHT HANDED  | SPIKY CUT  | LOUD ROCK MUSIC   |
| Erica Sinclair     | telekinesis  | sound wave    | LEFT HANDED   | CURLY MESH | BRIGHT FLASHLIGHT |
| Max Mayfield       | telekinesis  | frost touch   | RIGHT HANDED  | BUZZ CUT   | LOUD ROCK MUSIC   |
| Bob Newby          | telekinesis  | static shield | LEFT HANDED   | CURLY MESH | BRIGHT FLASHLIGHT |
| Robin Buckley      | mind pulse   | sound wave    | LEFT HANDED   | BUZZ CUT   | LOUD ROCK MUSIC   |
| Eleven Hopper      | shadow cloak | laser glance  | LEFT HANDED   | CURLY MESH | BRIGHT FLASHLIGHT |
| Steve Harrington   | telekinesis  | laser glance  | LEFT HANDED   | CURLY MESH | STICKY HAIRSPRAY  |
| Chrissy Cunningham | telekinesis  | sound wave    | RIGHT HANDED  | SPIKY CUT  | LOUD ROCK MUSIC   |
| Argyle             | telekinesis  | frost touch   | LEFT HANDED   | SPIKY CUT  | LOUD ROCK MUSIC   |
| Suzie Bingham      | time echo    | laser glance  | RIGHT HANDED  | SPIKY CUT  | BRIGHT FLASHLIGHT |
| Jim Hopper         | mind pulse   | laser glance  | LEFT HANDED   | BUZZ CUT   | STICKY HAIRSPRAY  |
| Eddie Munson       | telekinesis  | laser glance  | LEFT HANDED   | BUZZ CUT   | BRIGHT FLASHLIGHT |
| Joyce Byers        | shadow cloak | static shield | RIGHT HANDED  | CURLY MESH | BRIGHT FLASHLIGHT |
| Karen Wheeler      | mind pulse   | sound wave    | RIGHT HANDED  | BUZZ CUT   | STICKY HAIRSPRAY  |
| Billy Hargrove     | mind pulse   | gravity flip  | LEFT HANDED   | BUZZ CUT   | STICKY HAIRSPRAY  |
| Dr Owens           | time echo    | laser glance  | RIGHT HANDED  | CURLY MESH | BRIGHT FLASHLIGHT |
| Dustin Henderson   | telekinesis  | frost touch   | LEFT HANDED   | CURLY MESH | BRIGHT FLASHLIGHT |
| Lucas Sinclair     | mind pulse   | gravity flip  | LEFT HANDED   | BUZZ CUT   | LOUD ROCK MUSIC   |
| Fred Benson        | portal spark | laser glance  | RIGHT HANDED  | BUZZ CUT   | STICKY HAIRSPRAY  |

**CLUE 1**
**Multiplication facts (1-12)**

You check the rows of walkie talkies charging on the lab workbench to gather your first clue.

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

|     |    |     |    |   |     |     |    |   |    |   |     |     |    |    |     |     |
|-----|----|-----|----|---|-----|-----|----|---|----|---|-----|-----|----|----|-----|-----|
| T   |    |     |    |   |     |     |    |   |    |   |     |     |    |    |     | T   |
| 132 | 42 | 100 | 77 | 1 | 108 | 108 | 56 | 1 | 64 | 3 | 121 | 100 | 16 | 64 | 121 | 132 |

  

|   |    |     |     |    |     |    |     |     |     |   |    |    |
|---|----|-----|-----|----|-----|----|-----|-----|-----|---|----|----|
|   |    |     |     |    | T   | T  |     |     |     |   |    |    |
| 2 | 16 | 100 | 144 | 36 | 121 | 16 | 132 | 132 | 121 | 2 | 33 | 42 |

$12 \times 11 = \square \rightarrow \text{T}$

$1 \times 1 = \square \rightarrow \text{I}$

$12 \times 9 = \square \rightarrow \text{L}$

$7 \times 11 = \square \rightarrow \text{V}$

$1 \times 2 = \square \rightarrow \text{U}$

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

$10 \times 10 = \square \rightarrow \text{E}$

$4 \times 9 = \square \rightarrow \text{R}$

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

$6 \times 7 = \square \rightarrow \text{H}$

$3 \times 11 = \square \rightarrow \text{C}$

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

$12 \times 12 = \square \rightarrow \text{F}$

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

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

Scratch space:

## CLUE 2

## Multi-step word problems

The team counts the arcade tokens collected before and after the surge to calculate the damage.

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

A witness saw the villain was

|    |    |    |    |    |    |    |  |    |  |   |
|----|----|----|----|----|----|----|--|----|--|---|
| L  |    |    |    |    |    |    |  | D  |  | D |
| 46 | 81 | 10 | 16 | 66 | 69 | 13 |  | 81 |  |   |

There were 242 waffles in all. 1 The Hawkins Radio Club used 12 waffles each. The other 5 The Hawkins Radio Club shared the rest equally. How many waffles did each of the other The Hawkins Radio Club get?

Answer:  → **L**

AV Club Detective earned 6 walkie talkies in each of 2 rounds, plus 10 bonus walkie talkies. Then 6 walkie talkies were lost. How many walkie talkies are left?

Answer:  → **T**

There were 95 twenty sided dice in all. 4 The Hawkins Radio Club used 14 twenty sided dice each. The other 3 The Hawkins Radio Club shared the rest equally. How many twenty sided dice did each of the other The Hawkins Radio Club get?

Answer:  → **N**

There were 264 walkie talkies in all. 21 walkie talkies were set aside. The rest were shared equally among 3 The Hawkins Radio Club. How many walkie talkies did each get?

Answer:  → **E**

There were 304 flashlights in all. 1 The Hawkins Radio Club used 28 flashlights each. The other 4 The Hawkins Radio Club shared the rest equally. How many flashlights did each of the other The Hawkins Radio Club get?

Answer:  → **A**

There were 49 flashlights in all. 29 flashlights were set aside. The rest were shared equally among 2 The Hawkins Radio Club. How many flashlights did each get?

Answer:  → **F**

AV Club Detective collected 2 flashlights in the morning and 262 flashlights in the afternoon, then split them equally among 4 The Hawkins Radio Club. How many flashlights did each get?

Answer:  → **H**

Scratch space:

### CLUE 3 Percentages

A glowing sensor displays what percentage of the portal energy remains in the gym.

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

|          |    |   |    |    |    |    |    |    |    |    |    |   |    |    |    |
|----------|----|---|----|----|----|----|----|----|----|----|----|---|----|----|----|
| <b>B</b> |    |   |    |    |    |    |    |    |    |    |    |   |    |    |    |
| 39       | 26 | 4 | 10 | 14 | 24 | 36 | 31 | 13 | 32 | 14 | 31 | 4 | 10 | 14 | 24 |

|          |    |    |    |    |    |    |    |    |    |   |    |          |    |    |   |
|----------|----|----|----|----|----|----|----|----|----|---|----|----------|----|----|---|
| <b>B</b> |    |    |    |    |    |    |    |    |    |   |    | <b>B</b> |    |    |   |
| 39       | 42 | 13 | 45 | 32 | 27 | 26 | 40 | 18 | 42 | 4 | 24 | 39       | 13 | 29 | 5 |

$5\% \text{ of } 780 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{B}}$

$25\% \text{ of } 96 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{T}}$

$50\% \text{ of } 28 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{H}}$

$60\% \text{ of } 45 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{D}}$

$25\% \text{ of } 128 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{S}}$

$50\% \text{ of } 62 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{L}}$

$10\% \text{ of } 100 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{G}}$

$10\% \text{ of } 260 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{R}}$

$5\% \text{ of } 360 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{V}}$

$50\% \text{ of } 10 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{K}}$

$5\% \text{ of } 580 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{C}}$

$10\% \text{ of } 450 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{M}}$

$25\% \text{ of } 16 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{I}}$

$40\% \text{ of } 90 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{F}}$

$5\% \text{ of } 800 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{O}}$

$20\% \text{ of } 210 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{E}}$

$10\% \text{ of } 130 = \boxed{\phantom{000}} \rightarrow \boxed{\mathbf{A}}$

Scratch space:

## CLUE 4 Exponents

The radio signal power multiplies exponentially with each kilometer closer to the rift.

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

|          |     |     |    |    |     |     |    |   |    |   |     |          |     |     |    |          |     |   |
|----------|-----|-----|----|----|-----|-----|----|---|----|---|-----|----------|-----|-----|----|----------|-----|---|
| <b>A</b> |     |     |    |    |     |     |    |   |    |   |     | <b>A</b> |     |     |    | <b>A</b> |     |   |
| 361      | 289 | 400 | 64 | 25 | 121 | 225 | 49 | 8 | 32 | 8 | 196 | 64       | 361 | 100 | 36 | 144      | 361 | 8 |

  

|     |     |     |     |    |     |    |          |    |     |    |    |    |   |     |     |
|-----|-----|-----|-----|----|-----|----|----------|----|-----|----|----|----|---|-----|-----|
|     |     |     |     |    |     |    | <b>A</b> |    |     |    |    |    |   |     |     |
| 243 | 216 | 400 | 100 | 36 | 100 | 49 | 361      | 64 | 196 | 32 | 49 | 64 | 4 | 243 | 196 |

|                                         |                                         |                                         |                                         |
|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|
| $19^2 = \square \rightarrow \mathbf{A}$ | $5^2 = \square \rightarrow \mathbf{L}$  | $20^2 = \square \rightarrow \mathbf{U}$ | $14^2 = \square \rightarrow \mathbf{T}$ |
| $6^3 = \square \rightarrow \mathbf{O}$  | $2^2 = \square \rightarrow \mathbf{I}$  | $7^2 = \square \rightarrow \mathbf{E}$  | $2^5 = \square \rightarrow \mathbf{H}$  |
| $6^2 = \square \rightarrow \mathbf{D}$  | $11^2 = \square \rightarrow \mathbf{Y}$ | $12^2 = \square \rightarrow \mathbf{W}$ | $10^2 = \square \rightarrow \mathbf{N}$ |
| $15^2 = \square \rightarrow \mathbf{M}$ | $2^6 = \square \rightarrow \mathbf{R}$  | $2^3 = \square \rightarrow \mathbf{S}$  | $3^5 = \square \rightarrow \mathbf{F}$  |
| $17^2 = \square \rightarrow \mathbf{C}$ |                                         |                                         |                                         |

Scratch space:

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

You figure out how many more batteries are needed to fully power the containment trap.

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:**

$38 + \underline{\quad} = 42$

$24 + \underline{\quad} = 30$

$34 + \underline{\quad} = 39$

$33 + \underline{\quad} = 36$

$23 + \underline{\quad} = 30$

$11 + \underline{\quad} = 19$

$34 + \underline{\quad} = 43$

$27 + \underline{\quad} = 28$

$34 + \underline{\quad} = 36$

$25 + \underline{\quad} = 35$

$3 + \underline{\quad} = 15$

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

1. The villain lit a portal spark, then raised a static shield.
2. The villain created a time echo, then raised a static shield.
3. The villain created a time echo, then froze with frost touch.
4. The villain blasted telekinesis, then blared a sound wave.
5. The villain wove a shadow cloak, then shot a laser glance.
6. The villain created a time echo, then blared a sound wave.
7. The villain blasted telekinesis, then shot a laser glance.
8. The villain cast a mind pulse, then shot a laser glance.
9. The villain blasted telekinesis, then caused a gravity flip.
10. The villain blasted telekinesis, then froze with frost touch.
11. The villain blasted telekinesis, then raised a static shield.
12. The villain cast a mind pulse, then raised a static shield.

# Answer Key

## The Mystery of Echo Ridge

### Culprit: Bob Newby

telekinesis · static shield · LEFT HANDED · CURLY MESH · BRIGHT FLASHLIGHT

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 5 → Clue 4 4 → Clue 5 1

### Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE FROST TOUCH"

$12 \times 11 = 132$  (T) ·  $1 \times 1 = 1$  (I) ·  $12 \times 9 = 108$  (L) ·  $7 \times 11 = 77$  (V) ·  $1 \times 2 = 2$  (U) ·  $2 \times 8 = 16$  (S) ·  $10 \times 10 = 100$  (E) ·  $4 \times 9 = 36$  (R) ·  $8 \times 8 = 64$  (N) ·  $6 \times 7 = 42$  (H) ·  $3 \times 11 = 33$  (C) ·  $3 \times 1 = 3$  (D) ·  $12 \times 12 = 144$  (F) ·  $11 \times 11 = 121$  (O) ·  $7 \times 8 = 56$  (A)

### Clue 2 (Multi-step word problems): "LEFT HANDED"

There were 242 waffles in all. 1 The Hawkins Radio Club used 12 waffles each. The other 5 The Hawkins Radio Club shared the rest equally. How many waffles did each of the other The Hawkins Radio Club get? = 46 (L) · AV Club Detective earned 6 walkie talkies in each of 2 rounds, plus 10 bonus walkie talkies. Then 6 walkie talkies were lost. How many walkie talkies are left? = 16 (T) · There were 95 twenty sided dice in all. 4 The Hawkins Radio Club used 14 twenty sided dice each. The other 3 The Hawkins Radio Club shared the rest equally. How many twenty sided dice did each of the other The Hawkins Radio Club get? = 13 (N) · There were 264 walkie talkies in all. 21 walkie talkies were set aside. The rest were shared equally among 3 The Hawkins Radio Club. How many walkie talkies did each get? = 81 (E) · There were 304 flashlights in all. 1 The Hawkins Radio Club used 28 flashlights each. The other 4 The Hawkins Radio Club shared the rest equally. How many flashlights did each of the other The Hawkins Radio Club get? = 69 (A) · There were 49 flashlights in all. 29 flashlights were set aside. The rest were shared equally among 2 The Hawkins Radio Club. How many flashlights did each get? = 10 (F) · AV Club Detective collected 2 flashlights in the morning and 262 flashlights in the afternoon, then split them equally among 4 The Hawkins Radio Club. How many flashlights did each get? = 66 (H)

### Clue 3 (Percentages): "BRIGHT FLASHLIGHT BEAMS DROVE IT BACK"

5% of 780 = 39 (B) · 25% of 96 = 24 (T) · 50% of 28 = 14 (H) · 60% of 45 = 27 (D) · 25% of 128 = 32 (S) · 50% of 62 = 31 (L) · 10% of 100 = 10 (G) · 10% of 260 = 26 (R) · 5% of 360 = 18 (V) · 50% of 10 = 5 (K) · 5% of 580 = 29 (C) · 10% of 450 = 45 (M) · 25% of 16 = 4 (I) · 40% of 90 = 36 (F) · 5% of 800 = 40 (O) · 20% of 210 = 42 (E) · 10% of 130 = 13 (A)

### Clue 4 (Exponents): "A CURLY MESH STRAND WAS FOUND NEAR THE RIFT"

$19^2 = 361$  (A) ·  $5^2 = 25$  (L) ·  $20^2 = 400$  (U) ·  $14^2 = 196$  (T) ·  $6^3 = 216$  (O) ·  $2^2 = 4$  (I) ·  $7^2 = 49$  (E) ·  $2^5 = 32$  (H) ·  $6^2 = 36$  (D) ·  $11^2 = 121$  (Y) ·  $12^2 = 144$  (W) ·  $10^2 = 100$  (N) ·  $15^2 = 225$  (M) ·  $2^6 = 64$  (R) ·  $2^3 = 8$  (S) ·  $3^5 = 243$  (F) ·  $17^2 = 289$  (C)

### Clue 5 (Missing addends): surviving statement is box 11 → Bob Newby

$38 + \underline{\quad} = 42$  = 4 ·  $24 + \underline{\quad} = 30$  = 6 ·  $34 + \underline{\quad} = 39$  = 5 ·  $33 + \underline{\quad} = 36$  = 3 ·  $23 + \underline{\quad} = 30$  = 7 ·  $11 + \underline{\quad} = 19$  = 8 ·  $34 + \underline{\quad} = 43$  = 9 ·  $27 + \underline{\quad} = 28$  = 1 ·  $34 + \underline{\quad} = 36$  = 2 ·  $25 + \underline{\quad} = 35$  = 10 ·  $3 + \underline{\quad} = 15$  = 12