



# The Mystery of the Emerald Championship Trophy

Grade 4 math · Multiplication, Addition, Fractions of a number, Rounding, Division · Reading level grades 3-4

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

During the final quarter of the Blocky Championship Game at the arena, someone swapped the real Emerald Championship Trophy with a fake wooden block! Detective Pixel must investigate the court and find out who stole the trophy.

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 Phantom Dribbler is** \_\_\_\_\_

# Possible suspects

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

| NAME               | SIGNATURE MOVE        | SPECIAL ITEM         | SHOOTING STYLE       | HEADWEAR         | ITEM WEAKNESS |
|--------------------|-----------------------|----------------------|----------------------|------------------|---------------|
| Jayson Tatum       | Pickaxe Bounce Pass   | Slime Pad High Jump  | Right Handed Shooter | Green Blocky Cut | Splash Potion |
| Kristaps Porzingis | Blocky Fast Break     | Slime Pad High Jump  | Left Handed Shooter  | Green Blocky Cut | Water Bucket  |
| Avery Bradley      | Emerald Alley Oop     | Ender Pearl Teleport | Right Handed Shooter | Obsidian Cap     | Splash Potion |
| Cedric Maxwell     | Pickaxe Bounce Pass   | Ender Pearl Teleport | Left Handed Shooter  | Golden Helmet    | Splash Potion |
| Jrue Holiday       | Blocky Fast Break     | Ender Pearl Teleport | Right Handed Shooter | Obsidian Cap     | Cobweb Trap   |
| Payton Pritchard   | Emerald Alley Oop     | Slime Pad High Jump  | Left Handed Shooter  | Obsidian Cap     | Splash Potion |
| Robert Williams    | Blocky Fast Break     | Creeper Speed Boost  | Right Handed Shooter | Obsidian Cap     | Water Bucket  |
| Sam Hauser         | Redstone Slam Dunk    | Creeper Speed Boost  | Right Handed Shooter | Green Blocky Cut | Water Bucket  |
| Al Horford         | Blocky Fast Break     | Golden Apple Boost   | Left Handed Shooter  | Golden Helmet    | Water Bucket  |
| Rajon Rondo        | Redstone Slam Dunk    | Golden Apple Boost   | Right Handed Shooter | Obsidian Cap     | Water Bucket  |
| Grant Williams     | Blocky Fast Break     | Golden Apple Boost   | Left Handed Shooter  | Green Blocky Cut | Cobweb Trap   |
| Ray Allen          | Pickaxe Bounce Pass   | Netherite Shield     | Right Handed Shooter | Golden Helmet    | Water Bucket  |
| Jaylen Brown       | Green Diamond Dribble | Ender Pearl Teleport | Left Handed Shooter  | Golden Helmet    | Water Bucket  |
| Bob Cousy          | Emerald Alley Oop     | Creeper Speed Boost  | Left Handed Shooter  | Obsidian Cap     | Water Bucket  |
| Paul Pierce        | Pickaxe Bounce Pass   | Creeper Speed Boost  | Left Handed Shooter  | Golden Helmet    | Water Bucket  |
| Marcus Smart       | Pickaxe Bounce Pass   | Creeper Speed Boost  | Left Handed Shooter  | Obsidian Cap     | Water Bucket  |
| Isaiah Thomas      | Pickaxe Bounce Pass   | Netherite Shield     | Left Handed Shooter  | Golden Helmet    | Water Bucket  |
| Derrick White      | Green Diamond Dribble | Netherite Shield     | Left Handed Shooter  | Golden Helmet    | Cobweb Trap   |
| Kendrick Perkins   | Green Diamond Dribble | Slime Pad High Jump  | Left Handed Shooter  | Obsidian Cap     | Cobweb Trap   |
| Kelly Olynyk       | Emerald Alley Oop     | Netherite Shield     | Left Handed Shooter  | Golden Helmet    | Water Bucket  |
| Red Auerbach       | Blocky Fast Break     | Ender Pearl Teleport | Right Handed Shooter | Golden Helmet    | Water Bucket  |

## Multiplication facts (1-12)

Coach Lucky counted the basketball racks lined up in equal rows along the craft court to gather clues.

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

70 55 16

42 120 100 100 72 120 99

25 45 16 108

99 45 70

30 108 16

40 45 100 25 16 99

72 2 2 100 16

15 45 45 108 70

$7 \times 10 = \boxed{\phantom{00}} \rightarrow \boxed{\text{T}}$

$9 \times 12 = \boxed{\phantom{000}} \rightarrow \boxed{\text{S}}$

$11 \times 5 = \boxed{\phantom{00}} \rightarrow \boxed{\text{H}}$

$9 \times 5 = \boxed{\phantom{00}} \rightarrow \boxed{0}$

$5 \times 5 = \square \rightarrow \boxed{\text{D}}$

$1 \times 2 = \square \rightarrow \boxed{\mathbf{P}}$

$11 \times 9 = \boxed{\phantom{00}} \rightarrow \boxed{\text{N}}$

$10 \times 4 = \boxed{\phantom{00}} \rightarrow \boxed{\text{G}}$

$2 \times 8 = \square \rightarrow \boxed{\mathbf{E}}$

$10 \times 12 = \boxed{\phantom{00}} \rightarrow \boxed{1}$

$3 \times 5 = \square \rightarrow \mathbf{B}$

$9 \times 8 =$    $\rightarrow$  **A**

$5 \times 6 = \square \rightarrow \boxed{\text{U}}$

$10 \times 10 = \boxed{\phantom{00}} \rightarrow \boxed{\text{L}}$

$7 \times 6 = \boxed{\phantom{00}} \rightarrow \boxed{\mathbf{V}}$

Scratch space:

## CLUE 2 Addition

The team tallied up all the emerald points scored across each quarter to track the suspect's movement.

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

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |  |  |  |  |  |  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|--|--|--|--|--|--|
| T    |      |      |      |      |      |      |      |      |      | T    |      |      |      |      |      | T    |      |      |      |  |  |  |  |  |  |  |  |
| 6422 | 3475 | 9297 | 6336 | 6651 | 6336 | 6605 | 9297 | 6504 | 6422 | 6336 | 3475 | 5264 | 5264 | 6422 | 6336 | 5803 | 6062 | 6422 | 3475 |  |  |  |  |  |  |  |  |

|      |      |      |      |      |      |      |      |      |      |      |      |      |  |  |
|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| T    |      |      |      |      |      |      |      |      |      | T    |      |      |  |  |
| 6422 | 3475 | 9297 | 6062 | 8759 | 7091 | 9297 | 9390 | 6422 | 3475 | 9708 | 7302 | 6798 |  |  |

$$2896 + 3526 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{T}}$$

$$2906 + 2897 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{W}}$$

$$1418 + 2057 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{H}}$$

$$5773 + 3617 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{F}}$$

$$4043 + 2019 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{I}}$$

$$4857 + 2234 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{L}}$$

$$6116 + 2643 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{R}}$$

$$3205 + 2059 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{O}}$$

$$2996 + 3609 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{P}}$$

$$5960 + 3748 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{A}}$$

$$4632 + 2670 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{N}}$$

$$4406 + 2392 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{D}}$$

$$2446 + 4205 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{U}}$$

$$3059 + 3277 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{S}}$$

$$3113 + 3391 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{C}}$$

$$6031 + 3266 = \boxed{\phantom{0000}} \rightarrow \boxed{\text{E}}$$

Scratch space:

**CLUE 3**

## Fractions of a number

Detective Pixel inspected a fraction of the court's crafting stations to narrow down the evidence.

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> |    |    |    |   |    |
| 26       | 8  | 26       | 14 | 9  | 22 | 7  | 38 | 33 | 27 | 9 | 14 | 8 | 26       | 16 | 38 | 16 | 9 | 11 |
|          |    |          |    |    |    |    |    |    |    |   |    |   |          |    |    |    |   |    |
| 14       | 31 | 16       | 14 | 31 | 23 | 14 | 21 | 9  | 17 |   |    |   |          |    |    |    |   |    |

$$4/6 \text{ of } 39 = \boxed{\phantom{00}} \rightarrow \boxed{\text{A}}$$

$$1/2 \text{ of } 46 = \boxed{\phantom{00}} \rightarrow \boxed{\text{P}}$$

$$5/10 \text{ of } 66 = \boxed{\phantom{00}} \rightarrow \boxed{\text{C}}$$

$$1/6 \text{ of } 132 = \boxed{\phantom{00}} \rightarrow \boxed{\text{R}}$$

$$1/6 \text{ of } 102 = \boxed{\phantom{00}} \rightarrow \boxed{\text{M}}$$

$$2/6 \text{ of } 93 = \boxed{\phantom{00}} \rightarrow \boxed{\text{O}}$$

$$2/6 \text{ of } 81 = \boxed{\phantom{00}} \rightarrow \boxed{\text{K}}$$

$$1/5 \text{ of } 40 = \boxed{\phantom{00}} \rightarrow \boxed{\text{W}}$$

$$7/10 \text{ of } 20 = \boxed{\phantom{00}} \rightarrow \boxed{\text{T}}$$

$$1/4 \text{ of } 64 = \boxed{\phantom{00}} \rightarrow \boxed{\text{S}}$$

$$3/8 \text{ of } 56 = \boxed{\phantom{00}} \rightarrow \boxed{\text{H}}$$

$$2/4 \text{ of } 76 = \boxed{\phantom{00}} \rightarrow \boxed{\text{U}}$$

$$2/10 \text{ of } 55 = \boxed{\phantom{00}} \rightarrow \boxed{\text{D}}$$

$$6/10 \text{ of } 15 = \boxed{\phantom{00}} \rightarrow \boxed{\text{E}}$$

$$2/8 \text{ of } 28 = \boxed{\phantom{00}} \rightarrow \boxed{\text{B}}$$

Scratch space:

## CLUE 4

## Rounding

The arena scoreboard registered the stadium fan energy, but it could only display rounded numbers.

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

|     |      |      |     |     |      |      |    |      |     |      |      |     |     |     |      |  |  |
|-----|------|------|-----|-----|------|------|----|------|-----|------|------|-----|-----|-----|------|--|--|
| A   |      |      |     |     |      |      |    |      |     |      |      |     |     |     |      |  |  |
| 300 | 5000 | 2300 | 500 | 130 | 4300 | 2900 | 50 | 4300 | 500 | 1300 | 4300 | 290 | 200 | 300 | 3000 |  |  |

  

|     |      |     |     |     |     |     |    |      |     |      |    |      |     |  |  |
|-----|------|-----|-----|-----|-----|-----|----|------|-----|------|----|------|-----|--|--|
|     |      |     |     | A   |     |     |    |      |     |      |    |      |     |  |  |
| 500 | 4300 | 110 | 290 | 300 | 290 | 290 | 50 | 4300 | 430 | 2300 | 20 | 1100 | 290 |  |  |

Round 348 to the nearest hundred  → **A**

Round 466 to the nearest hundred  → **L**

Round 2,880 to the nearest hundred  → **N**

Round 134 to the nearest ten  → **D**

Round 291 to the nearest ten  → **T**

Round 4,748 to the nearest thousand  → **G**

Round 3,367 to the nearest thousand  → **S**

Round 2,292 to the nearest hundred  → **O**

Round 1,137 to the nearest hundred  → **R**

Round 109 to the nearest ten  → **F**

Round 22 to the nearest ten  → **U**

Round 48 to the nearest ten  → **H**

Round 4,332 to the nearest hundred  → **E**

Round 228 to the nearest hundred  → **W**

Round 433 to the nearest ten  → **C**

Round 1,326 to the nearest hundred  → **M**

Scratch space:

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

The detective split the remaining redstone blocks equally among the defensive traps to locate the culprit.

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:**

$33 \div 11 = \boxed{\phantom{00}}$

$32 \div 4 = \boxed{\phantom{00}}$

$50 \div 10 = \boxed{\phantom{00}}$

$110 \div 10 = \boxed{\phantom{00}}$

$18 \div 9 = \boxed{\phantom{00}}$

$110 \div 11 = \boxed{\phantom{00}}$

$49 \div 7 = \boxed{\phantom{00}}$

$1 \div 1 = \boxed{\phantom{00}}$

$16 \div 4 = \boxed{\phantom{00}}$

$6 \div 1 = \boxed{\phantom{00}}$

$63 \div 7 = \boxed{\phantom{00}}$

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

1. The villain led a blocky fast break, then channeled creeper speed boost.
2. The villain threw an emerald alley oop, then bounced off a slime pad high jump.
3. The villain threw a pickaxe bounce pass, then raised a netherite shield.
4. The villain threw an emerald alley oop, then channeled creeper speed boost.
5. The villain used green diamond dribble, then activated an ender pearl teleport.
6. The villain used green diamond dribble, then bounced off a slime pad high jump.
7. The villain led a blocky fast break, then raised a netherite shield.
8. The villain threw a pickaxe bounce pass, then channeled creeper speed boost.
9. The villain used green diamond dribble, then ate a golden apple boost.
10. The villain led a blocky fast break, then ate a golden apple boost.
11. The villain threw a pickaxe bounce pass, then bounced off a slime pad high jump.
12. The villain threw an emerald alley oop, then raised a netherite shield.

# Answer Key

## The Mystery of the Emerald Championship Trophy

### Culprit: Kelly Olynyk

Emerald Alley Oop · Netherite Shield · Left Handed Shooter · Golden Helmet · Water Bucket

Trail: Start 21 → Clue 1 18 → Clue 2 11 → Clue 3 7 → Clue 4 4 → Clue 5 1

### Clue 1 (Multiplication facts (1-12)): "THE VILLAIN DOES NOT USE GOLDEN APPLE BOOST"

$7 \times 10 = 70$  (T) ·  $9 \times 12 = 108$  (S) ·  $11 \times 5 = 55$  (H) ·  $9 \times 5 = 45$  (O) ·  $5 \times 5 = 25$  (D) ·  $1 \times 2 = 2$  (P) ·  $11 \times 9 = 99$  (N) ·  $10 \times 4 = 40$  (G) ·  $2 \times 8 = 16$  (E) ·  $10 \times 12 = 120$  (I) ·  $3 \times 5 = 15$  (B) ·  $9 \times 8 = 72$  (A) ·  $5 \times 6 = 30$  (U) ·  $10 \times 10 = 100$  (L) ·  $7 \times 6 = 42$  (V)

### Clue 2 (Addition): "THE SUSPECT SHOOTS WITH THEIR LEFT HAND"

$2896 + 3526 = 6422$  (T) ·  $2906 + 2897 = 5803$  (W) ·  $1418 + 2057 = 3475$  (H) ·  $5773 + 3617 = 9390$  (F) ·  $4043 + 2019 = 6062$  (I) ·  $4857 + 2234 = 7091$  (L) ·  $6116 + 2643 = 8759$  (R) ·  $3205 + 2059 = 5264$  (O) ·  $2996 + 3609 = 6605$  (P) ·  $5960 + 3748 = 9708$  (A) ·  $4632 + 2670 = 7302$  (N) ·  $4406 + 2392 = 6798$  (D) ·  $2446 + 4205 = 6651$  (U) ·  $3059 + 3277 = 6336$  (S) ·  $3113 + 3391 = 6504$  (C) ·  $6031 + 3266 = 9297$  (E)

### Clue 3 (Fractions of a number): "A WATER BUCKET WAS USED TO STOP THEM"

$\frac{4}{6}$  of 39 = 26 (A) ·  $\frac{1}{2}$  of 46 = 23 (P) ·  $\frac{5}{10}$  of 66 = 33 (C) ·  $\frac{1}{6}$  of 132 = 22 (R) ·  $\frac{1}{6}$  of 102 = 17 (M) ·  $\frac{2}{6}$  of 93 = 31 (O) ·  $\frac{2}{6}$  of 81 = 27 (K) ·  $\frac{1}{5}$  of 40 = 8 (W) ·  $\frac{7}{10}$  of 20 = 14 (T) ·  $\frac{1}{4}$  of 64 = 16 (S) ·  $\frac{3}{8}$  of 56 = 21 (H) ·  $\frac{2}{4}$  of 76 = 38 (U) ·  $\frac{2}{10}$  of 55 = 11 (D) ·  $\frac{6}{10}$  of 15 = 9 (E) ·  $\frac{2}{8}$  of 28 = 7 (B)

### Clue 4 (Rounding): "A GOLDEN HELMET WAS LEFT AT THE COURT"

Round 348 to the nearest hundred = 300 (A) · Round 466 to the nearest hundred = 500 (L) · Round 2,880 to the nearest hundred = 2900 (N) · Round 134 to the nearest ten = 130 (D) · Round 291 to the nearest ten = 290 (T) · Round 4,748 to the nearest thousand = 5000 (G) · Round 3,367 to the nearest thousand = 3000 (S) · Round 2,292 to the nearest hundred = 2300 (O) · Round 1,137 to the nearest hundred = 1100 (R) · Round 109 to the nearest ten = 110 (F) · Round 22 to the nearest ten = 20 (U) · Round 48 to the nearest ten = 50 (H) · Round 4,332 to the nearest hundred = 4300 (E) · Round 228 to the nearest hundred = 200 (W) · Round 433 to the nearest ten = 430 (C) · Round 1,326 to the nearest hundred = 1300 (M)

### Clue 5 (Division facts (1-12)): surviving statement is box 12 → Kelly Olynyk

$33 \div 11 = 3$  ·  $32 \div 4 = 8$  ·  $50 \div 10 = 5$  ·  $110 \div 10 = 11$  ·  $18 \div 9 = 2$  ·  $110 \div 11 = 10$  ·  $49 \div 7 = 7$  ·  $1 \div 1 = 1$  ·  $16 \div 4 = 4$  ·  $6 \div 1 = 6$  ·  $63 \div 7 = 9$