# The Grotto Pearl Mystery

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

**Detective:** _____ **Date:** _____

Someone took the royal rainbow pearl from the underwater palace! The sea creatures and magical unicorns need your help to find the 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 grotto thief is** _____

## Possible suspects

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

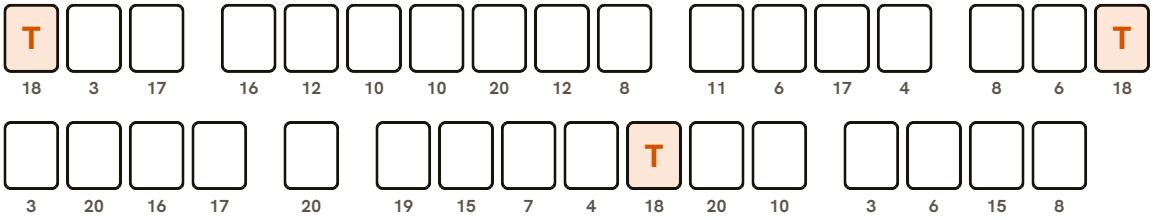
| NAME | MAGIC SPELL | SPARKLE TRAIL | ACCESSORY | HAIR COLOR | SECRET WEAKNESS |
|---|---|---|---|---|---|
| **Caspian** | bubble blast | sea sparkle | sea glass ring | coral pink hair | floating seaweed |
| **Kai** | coral shield | glitter trail | pearl bracelet | sunshine gold hair | noisy clams |
| **Sandy** | star shine | crystal horn | sea glass ring | sunshine gold hair | noisy clams |
| **Starla** | star shine | sea sparkle | sea glass ring | ocean blue hair | shiny mirrors |
| **Opal** | star shine | pearl glow | sea glass ring | coral pink hair | floating seaweed |
| **Marina** | coral shield | sea sparkle | pearl bracelet | sunshine gold hair | shiny mirrors |
| **Astra** | prism beam | rainbow leap | sea glass ring | sunshine gold hair | floating seaweed |
| **Pearl** | bubble blast | pearl glow | pearl bracelet | ocean blue hair | floating seaweed |
| **Delphin** | star shine | glitter trail | sea glass ring | sunshine gold hair | floating seaweed |
| **Sunny** | coral shield | glitter trail | pearl bracelet | ocean blue hair | floating seaweed |
| **Wave** | coral shield | pearl glow | pearl bracelet | coral pink hair | floating seaweed |
| **Coral** | tide wave | rainbow leap | sea glass ring | coral pink hair | floating seaweed |
| **Triton** | star shine | pearl glow | pearl bracelet | ocean blue hair | noisy clams |
| **Drift** | prism beam | sea sparkle | sea glass ring | coral pink hair | shiny mirrors |
| **Bubbles** | coral shield | glitter trail | pearl bracelet | ocean blue hair | noisy clams |
| **Coralie** | tide wave | glitter trail | sea glass ring | coral pink hair | shiny mirrors |
| **Splash** | bubble blast | glitter trail | sea glass ring | coral pink hair | shiny mirrors |
| **Orion** | tide wave | crystal horn | pearl bracelet | sunshine gold hair | floating seaweed |
| **Shelly** | bubble blast | pearl glow | sea glass ring | sunshine gold hair | floating seaweed |
| **Tide** | prism beam | sea sparkle | sea glass ring | coral pink hair | floating seaweed |
| **Finny** | tide wave | crystal horn | sea glass ring | coral pink hair | floating seaweed |

make your own at mathcrackers.com

## CLUE 1 Addition

> Captain Pearl added up all the shiny shells found near the reef to reveal the first code.

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



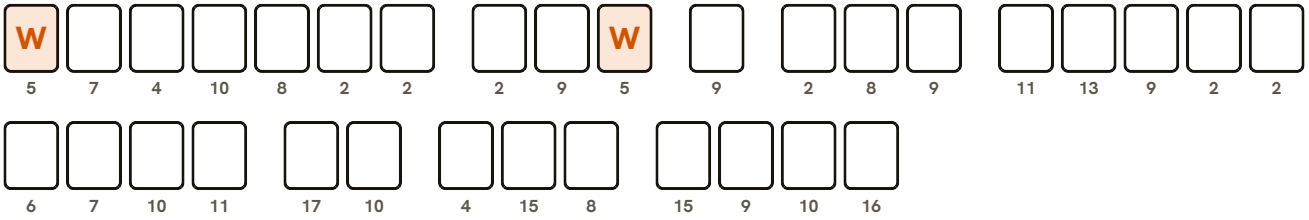

| | | |
|---|---|---|
| 7 + 11 = ☐ → T | 2 + 1 = ☐ → H | 3 + 1 = ☐ → S |
| 12 + 8 = ☐ → A | 6 + 11 = ☐ → E | 2 + 4 = ☐ → O |
| 5 + 3 = ☐ → N | 4 + 11 = ☐ → R | 9 + 7 = ☐ → V | 4 + 6 = ☐ → L |
| 3 + 8 = ☐ → D | 12 + 7 = ☐ → C | 6 + 6 = ☐ → I | 4 + 3 = ☐ → Y |

Scratch space:

## CLUE 2 Subtraction

Finny the seahorse swam past and subtracted the dull rocks from the pile.

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



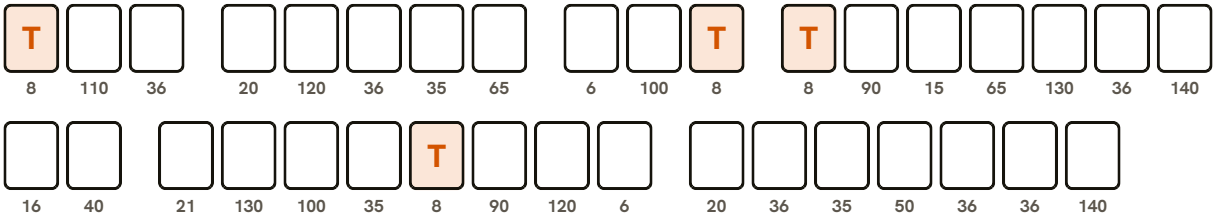

| | | | |
|---|---|---|---|
| 9 - 4 = ☐ → W | 18 - 9 = ☐ → A | 20 - 4 = ☐ → D | 15 - 8 = ☐ → I |
| 8 - 6 = ☐ → S | 20 - 9 = ☐ → G | 11 - 3 = ☐ → E | 10 - 6 = ☐ → T |
| 9 - 3 = ☐ → R | 18 - 8 = ☐ → N | 19 - 2 = ☐ → O | 19 - 4 = ☐ → H |
| 14 - 1 = ☐ → L | | | |

Scratch space:

## CLUE 3 Skip counting

Marina skip counted the magic star gems along the sandy path.

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




Skip-count by 2s. Fill the blank: 2, 4, 6, ___, 10, 12 ☐ → T

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, ___, 24, 27 ☐ → F

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, ___, 18, 21 ☐ → C

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, ___, 100, 110 ☐ → I

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, ___, 150, 160 ☐ → D

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

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, ___, 22, 24 ☐ → S

Skip-count by 2s. Fill the blank: 2, 4, ___, 8, 10 ☐ → G

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

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, ___, 55, 60 ☐ → W

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, ___, 18, 20 ☐ → B

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, ___, 45, 50 ☐ → **Y**

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

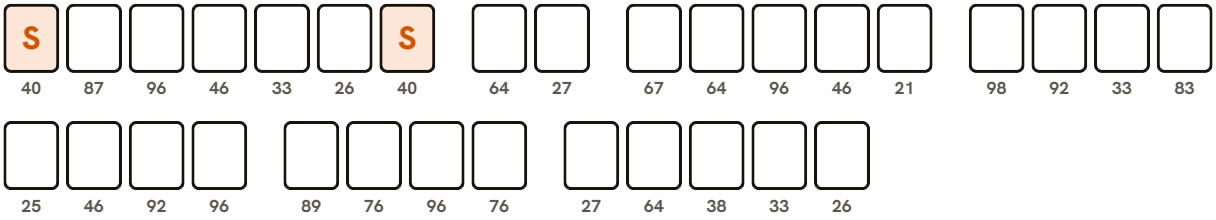
Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, ___, 140, 150 ☐ → **L**

Scratch space:

## CLUE 4 Place value

The glowing grotto board shows the tens and ones place for this next clue.

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




What number has 4 tens and 0 ones? ☐ → S

What number has 3 tens and 8 ones? ☐ → U

What number has 9 tens and 6 ones? ☐ → R

What number has 9 tens and 8 ones? ☐ → P

What number has 2 tens and 5 ones? ☐ → H

What number has 3 tens and 3 ones? ☐ → N

What number has 6 tens and 7 ones? ☐ → C

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

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

What number has 6 tens and 4 ones? ☐ → O

What number has 2 tens and 1 one? ☐ → L

What number has 2 tens and 7 ones? ☐ → F

What number has 4 tens and 6 ones? ☐ → A

What number has 8 tens and 7 ones? ☐ → T

What number has 9 tens and 2 ones? ☐ → I

What number has 8 tens and 3 ones? ☐ → K

What number has 2 tens and 6 ones? ☐ → D

Scratch space:

## CLUE 5 Missing addends - the last clue

Splash needs to figure out the missing number of pearls to unlock the final message.

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 + ___ = 12 ☐ | 4 + ___ = 13 ☐ | 6 + ___ = 9 ☐ | 5 + ___ = 11 ☐ |
| 2 + ___ = 6 ☐ | 2 + ___ = 7 ☐ | 1 + ___ = 11 ☐ | 9 + ___ = 10 ☐ |
| 5 + ___ = 12 ☐ | 1 + ___ = 13 ☐ | 8 + ___ = 19 ☐ | |

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

1. The villain shot a bubble blast, then used a crystal horn.
2. The villain shot a bubble blast, then made a sea sparkle.
3. The villain made a tide wave, then made a rainbow leap.
4. The villain shot a bubble blast, then made a rainbow leap.
5. The villain used a coral shield, then lit a pearl glow.
6. The villain used a coral shield, then left a glitter trail.
7. The villain made a star shine, then used a crystal horn.
8. The villain cast a prism beam, then made a sea sparkle.
9. The villain made a star shine, then lit a pearl glow.
10. The villain cast a prism beam, then made a rainbow leap.
11. The villain shot a bubble blast, then left a glitter trail.
12. The villain made a tide wave, then made a sea sparkle.

TEACHER / PARENT

# Answer Key

The Grotto Pearl Mystery

## Culprit: Tide

prism beam · sea sparkle · sea glass ring · coral pink hair · floating seaweed

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

### Clue 1 (Addition): "THE VILLAIN DOES NOT HAVE A CRYSTAL HORN"

7 + 11 = 18 (T) · 2 + 1 = 3 (H) · 3 + 1 = 4 (S) · 12 + 8 = 20 (A) · 6 + 11 = 17 (E) · 2 + 4 = 6 (O) · 5 + 3 = 8 (N) · 4 + 11 = 15 (R) · 9 + 7 = 16 (V) · 4 + 6 = 10 (L) · 3 + 8 = 11 (D) · 12 + 7 = 19 (C) · 6 + 6 = 12 (I) · 4 + 3 = 7 (Y)

### Clue 2 (Subtraction): "WITNESS SAW A SEA GLASS RING ON THE HAND"

9 - 4 = 5 (W) · 18 - 9 = 9 (A) · 20 - 4 = 16 (D) · 15 - 8 = 7 (I) · 8 - 6 = 2 (S) · 20 - 9 = 11 (G) · 11 - 3 = 8 (E) · 10 - 6 = 4 (T) · 9 - 3 = 6 (R) · 18 - 8 = 10 (N) · 19 - 2 = 17 (O) · 19 - 4 = 15 (H) · 14 - 1 = 13 (L)

### Clue 3 (Skip counting): "THE SNEAK GOT TICKLED BY FLOATING SEAWEED"

Skip-count by 2s. Fill the blank: 2, 4, 6, ___, 10, 12 = 8 (T) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, ___, 24, 27 = 21 (F) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, ___, 18, 21 = 15 (C) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, ___, 100, 110 = 90 (I) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, ___, 150, 160 = 140 (D) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, ___, 120, 130 = 110 (H) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, ___, 70, 75 = 65 (K) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, ___, 22, 24 = 20 (S) · Skip-count by 2s. Fill the blank: 2, 4, ___, 8, 10 = 6 (G) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, ___, 39, 42 = 36 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, ___, 130, 140 = 120 (N) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, ___, 55, 60 = 50 (W) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, ___, 18, 20 = 16 (B) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, ___, 40, 45 = 35 (A) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, ___, 45, 50 = 40 (Y) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, ___, 110, 120 = 100 (O) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, ___, 140, 150 = 130 (L)

### Clue 4 (Place value): "STRANDS OF CORAL PINK HAIR WERE FOUND"

What number has 4 tens and 0 ones? = 40 (S) · What number has 3 tens and 8 ones? = 38 (U) · What number has 9 tens and 6 ones? = 96 (R) · What number has 9 tens and 8 ones? = 98 (P) · What number has 2 tens and 5 ones? = 25 (H) · What number has 3 tens and 3 ones? = 33 (N) · What number has 6 tens and 7 ones? = 67 (C) · What number has 8 tens and 9 ones? = 89 (W) · What number has 7 tens and 6 ones? = 76 (E) · What number has 6 tens and 4 ones? = 64 (O) · What number has 2 tens and 1 one? = 21 (L) · What number has 2 tens and 7 ones? = 27 (F) · What number has 4 tens and 6 ones? = 46 (A) · What number has 8 tens and 7 ones? = 87 (T) · What number has 9 tens and 2 ones? = 92 (I) · What number has 8 tens and 3 ones? = 83 (K) · What number has 2 tens and 6 ones? = 26 (D)

### Clue 5 (Missing addends): surviving statement is box 8 → Tide

10 + ___ = 12 = 2 · 4 + ___ = 13 = 9 · 6 + ___ = 9 = 3 · 5 + ___ = 11 = 6 · 2 + ___ = 6 = 4 · 2 + ___ = 7 = 5 · 1 + ___ = 11 = 10 · 9 + ___ = 10 = 1 · 5 + ___ = 12 = 7 · 1 + ___ = 13 = 12 · 8 + ___ = 19 = 11