The Mystery of the Sunken Pearl

Grade 5 math · Skip counting, Rounding, Word problems, Multi-step word problems, Missing addends · Reading level grades 5-6

Detective: _____ **Date:** _____

Someone snuck into the royal sea vault of Coral Haven Reef and snatched the Glowing Sun Pearl! The High Keeper needs your detective skills to decipher ocean clues and unmask the culprit before they swim away into the deep abyss.

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 rogue mermaid is _____

Possible suspects

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

NAME	TAIL MAGIC	SPECIAL GEAR	ACCESSORY	HAIR COLOR	DISTRACTION
Harbor Ray	Tide Summoning	Speed Fins	Pearl Tiara	Seafoam Green	Sea Urchin Dust
Marina Wave	Coral Carving	Dolphin Whistle	Kelp Ribbon	Deep Ocean Blue	Bright Sea Flare
Coral Seaforth	Siren Singing	Deep Sight Scope	Pearl Tiara	Deep Ocean Blue	Sea Urchin Dust
Pearl Waters	Siren Singing	Speed Fins	Pearl Tiara	Coral Pink	Soft Bell Chime
Nerida Shell	Wave Blast	Shell Shield	Pearl Tiara	Coral Pink	Sea Urchin Dust
Delphine Blue	Wave Blast	Dolphin Whistle	Pearl Tiara	Seafoam Green	Sea Urchin Dust
Thalassa Foam	Siren Singing	Speed Fins	Pearl Tiara	Seafoam Green	Bright Sea Flare
Waverly Blue	Whirlpool Spin	Shell Shield	Kelp Ribbon	Seafoam Green	Sea Urchin Dust
Aquata Gloss	Tide Summoning	Pearl Lantern	Pearl Tiara	Seafoam Green	Sea Urchin Dust
Triton Reed	Siren Singing	Dolphin Whistle	Pearl Tiara	Deep Ocean Blue	Sea Urchin Dust
Coralina Star	Wave Blast	Speed Fins	Kelp Ribbon	Deep Ocean Blue	Sea Urchin Dust
Coralie Coast	Coral Carving	Deep Sight Scope	Kelp Ribbon	Coral Pink	Sea Urchin Dust
Sandy Reef	Tide Summoning	Deep Sight Scope	Kelp Ribbon	Deep Ocean Blue	Sea Urchin Dust
Caspian Drift	Coral Carving	Speed Fins	Kelp Ribbon	Deep Ocean Blue	Bright Sea Flare
Cleo Glint	Wave Blast	Pearl Lantern	Pearl Tiara	Seafoam Green	Sea Urchin Dust
Kai Current	Siren Singing	Speed Fins	Pearl Tiara	Seafoam Green	Sea Urchin Dust
Tarni Mist	Siren Singing	Deep Sight Scope	Kelp Ribbon	Seafoam Green	Soft Bell Chime
Finneas Tide	Wave Blast	Speed Fins	Pearl Tiara	Seafoam Green	Bright Sea Flare
Nereus Depth	Wave Blast	Pearl Lantern	Pearl Tiara	Coral Pink	Bright Sea Flare
Brooke Splash	Siren Singing	Speed Fins	Pearl Tiara	Coral Pink	Bright Sea Flare
Mako Waters	Coral Carving	Speed Fins	Pearl Tiara	Deep Ocean Blue	Sea Urchin Dust

make your own at mathcrackers.com

CLUE 1 Skip counting

> To track the culprit's swimming trail, follow the glowing jellyfish along the reef floor by counting in equal leaps to decode the clue.

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

T																								T						
120	40	130	80	30	70	70	8	30	39	60	12	130	10	39	12	120														
110	10	130	8	60	12	70	9	40	30	39	15	40	30	10	120	70	130													

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

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, ___, 12, 14 ☐ → **S**

Skip-count by 5s. Fill the blank: 5, 10, ___, 20, 25 ☐ → **W**

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

Skip-count by 3s. Fill the blank: 3, 6, ___, 12, 15 ☐ → **P**

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

Skip-count by 10s. Fill the blank: 10, 20, 30, ___, 50, 60 ☐ → **H**

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, ___, 70, 80 ☐ → **D**

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

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, ___, 35, 40 ☐ → **I**

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

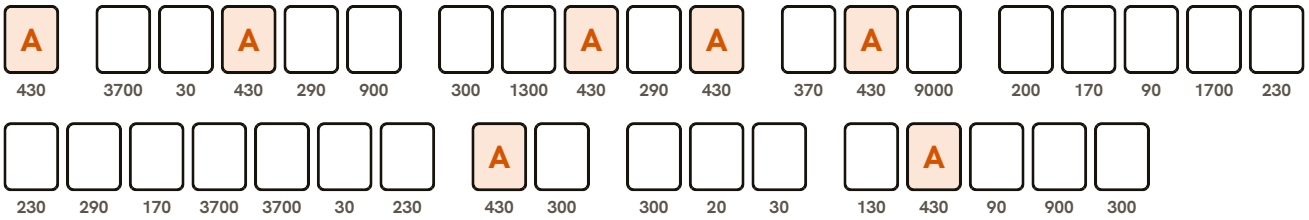
Skip-count by 3s. Fill the blank: 3, 6, 9, ___, 15, 18 ☐ → **O**

Scratch space:

CLUE 2 Rounding

> The vault pressure gauge only displays estimated depth values. Round the numbers to unlock the next encoded message.

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



Round 433 to the nearest ten ☐ → A

Round 18 to the nearest ten ☐ → H

Round 88 to the nearest ten ☐ → U

Round 165 to the nearest hundred ☐ → F

Round 293 to the nearest ten ☐ → R

Round 172 to the nearest ten ☐ → O

Round 230 to the nearest ten ☐ → D

Round 28 to the nearest ten ☐ → E

Round 366 to the nearest ten ☐ → W

Round 8,952 to the nearest thousand ☐ → S

Round 3,708 to the nearest hundred ☐ → P

Round 302 to the nearest hundred ☐ → T

Round 1,671 to the nearest hundred ☐ → N

Round 1,316 to the nearest hundred ☐ → I

Round 879 to the nearest hundred ☐ → L

Round 133 to the nearest ten ☐ → V

Scratch space:

CLUE 3 Word problems

The Tide Scout calculates the damaged shell lockets found along the reef wall to discover new evidence.

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

Someone scared the villain off with 

.

There were 81 starfish tokens. 5 were used up. How many starfish tokens are left?

Answer: ☐ → **S**

There were 46 sea glass beads. 29 were used up. How many sea glass beads are left?

Answer: ☐ → **A**

There were 70 sea glass beads. 5 were used up. How many sea glass beads are left?

Answer: ☐ → **U**

Tide Scout found 18 starfish tokens yesterday and 19 more today. How many starfish tokens in all?

Answer: ☐ → **R**

Tide Scout lined up 10 rows of 8 starfish tokens. How many starfish tokens in all?

Answer: ☐ → **E**

There were 84 kelp rolls. 33 were used up. How many kelp rolls are left?

Answer: ☐ → **H**

Tide Scout found 37 kelp rolls yesterday and 61 more today. How many kelp rolls in all?

Answer: ☐ → **C**

Scratch space:

CLUE 4 Multi-step word problems

> Calculating how many glowing beads were lost requires adding the original stash and subtracting the dropped loot.

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

A strand of

S								R			N
62	56	48	36	14	48	7	27		56	56	

hair turned up at the scene.

There were 193 kelp rolls in all. 3 Ocean Guard used 23 kelp rolls each. The other 2 Ocean Guard shared the rest equally. How many kelp rolls did each of the other Ocean Guard get?

Answer: ☐ → **S**

Tide Scout collected 9 starfish tokens in the morning and 5 starfish tokens in the afternoon, then split them equally among 2 Ocean Guard. How many starfish tokens did each get?

Answer: ☐ → **M**

Tide Scout earned 6 sea glass beads in each of 4 rounds, plus 42 bonus sea glass beads. Then 10 sea glass beads were lost. How many sea glass beads are left?

Answer: ☐ → **E**

Tide Scout earned 3 polished shells in each of 6 rounds, plus 30 bonus polished shells. Then 12 polished shells were lost. How many polished shells are left?

Answer: ☐ → **F**

Tide Scout collected 125 sea glass beads in the morning and 163 sea glass beads in the afternoon, then split them equally among 6 Ocean Guard. How many sea glass beads did each get?

Answer: ☐ → **A**

There were 71 sea glass beads in all. 1 sea glass beads were set aside. The rest were shared equally among 5 Ocean Guard. How many sea glass beads did each get?

Answer: ☐ → **O**

Tide Scout collected 102 polished shells in the morning and 60 polished shells in the afternoon, then split them equally among 6 Ocean Guard. How many polished shells did each get?

Answer: ☐ → **G**

Scratch space:

CLUE 5 Missing addends - the last clue

The Ocean Guard ledger shows incomplete totals. Fill in the missing amounts to finish the vault report.

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:

17 + ___ = 20 ☐	36 + ___ = 48 ☐	7 + ___ = 15 ☐	24 + ___ = 28 ☐
39 + ___ = 44 ☐	24 + ___ = 31 ☐	30 + ___ = 39 ☐	19 + ___ = 25 ☐
24 + ___ = 35 ☐	38 + ___ = 40 ☐	7 + ___ = 8 ☐	

Step 2 - cross out the sentence with each answer:

1. The villain carved through hard branch coral, then called wild sea creatures with a dolphin whistle.
2. The villain carved through hard branch coral, then scouted the secret exit with a deep sight scope.
3. The villain sang a hypnotic siren song, then darted away fast using speed fins.
4. The villain summoned a strong ocean tide, then called wild sea creatures with a dolphin whistle.
5. The villain spun a dangerous swirling whirlpool, then darted away fast using speed fins.
6. The villain sang a hypnotic siren song, then lit up the dark vault with a pearl lantern.
7. The villain blasted a powerful water wave, then blocked the guards with a heavy shell shield.
8. The villain summoned a strong ocean tide, then darted away fast using speed fins.
9. The villain carved through hard branch coral, then blocked the guards with a heavy shell shield.
10. The villain summoned a strong ocean tide, then lit up the dark vault with a pearl lantern.
11. The villain carved through hard branch coral, then darted away fast using speed fins.
12. The villain blasted a powerful water wave, then lit up the dark vault with a pearl lantern.

TEACHER / PARENT

Answer Key

The Mystery of the Sunken Pearl

Culprit: Aquata Gloss

Tide Summoning · Pearl Lantern · Pearl Tiara · Seafoam Green · Sea Urchin Dust

Trail: Start 21 → Clue 1 18 → Clue 2 12 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Skip counting): "THE VILLAIN DOES NOT USE A DOLPHIN WHISTLE"

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

Clue 2 (Rounding): "A PEARL TIARA WAS FOUND DROPPED AT THE VAULT"

Round 433 to the nearest ten = 430 (A) · Round 18 to the nearest ten = 20 (H) · Round 88 to the nearest ten = 90 (U) · Round 165 to the nearest hundred = 200 (F) · Round 293 to the nearest ten = 290 (R) · Round 172 to the nearest ten = 170 (O) · Round 230 to the nearest ten = 230 (D) · Round 28 to the nearest ten = 30 (E) · Round 366 to the nearest ten = 370 (W) · Round 8,952 to the nearest thousand = 9000 (S) · Round 3,708 to the nearest hundred = 3700 (P) · Round 302 to the nearest hundred = 300 (T) · Round 1,671 to the nearest hundred = 1700 (N) · Round 1,316 to the nearest hundred = 1300 (I) · Round 879 to the nearest hundred = 900 (L) · Round 133 to the nearest ten = 130 (V)

Clue 3 (Word problems): "SEA URCHIN DUST"

There were 81 starfish tokens. 5 were used up. How many starfish tokens are left? = 76 (S) · There were 46 sea glass beads. 29 were used up. How many sea glass beads are left? = 17 (A) · There were 70 sea glass beads. 5 were used up. How many sea glass beads are left? = 65 (U) · Tide Scout found 18 starfish tokens yesterday and 19 more today. How many starfish tokens in all? = 37 (R) · Tide Scout lined up 10 rows of 8 starfish tokens. How many starfish tokens in all? = 80 (E) · There were 84 kelp rolls. 33 were used up. How many kelp rolls are left? = 51 (H) · Tide Scout found 37 kelp rolls yesterday and 61 more today. How many kelp rolls in all? = 98 (C)

Clue 4 (Multi-step word problems): "SEAFOAM GREEN"

There were 193 kelp rolls in all. 3 Ocean Guard used 23 kelp rolls each. The other 2 Ocean Guard shared the rest equally. How many kelp rolls did each of the other Ocean Guard get? = 62 (S) · Tide Scout collected 9 starfish tokens in the morning and 5 starfish tokens in the afternoon, then split them equally among 2 Ocean Guard. How many starfish tokens did each get? = 7 (M) · Tide Scout earned 6 sea glass beads in each of 4 rounds, plus 42 bonus sea glass beads. Then 10 sea glass beads were lost. How many sea glass beads are left? = 56 (E) · Tide Scout earned 3 polished shells in each of 6 rounds, plus 30 bonus polished shells. Then 12 polished shells were lost. How many polished shells are left? = 36 (F) · Tide Scout collected 125 sea glass beads in the morning and 163 sea glass beads in the afternoon, then split them equally among 6 Ocean Guard. How many sea glass beads did each get? = 48 (A) · There were 71 sea glass beads in all. 1 sea glass beads were set aside. The rest were shared equally among 5 Ocean Guard. How many sea glass beads did each get? = 14 (O) · Tide Scout collected 102 polished shells in the morning and 60 polished shells in the afternoon, then split them equally among 6 Ocean Guard. How many polished shells did each get? = 27 (G)

Clue 5 (Missing addends): surviving statement is box 10 → Aquata Gloss

17 + ___ = 20 = 3 · 36 + ___ = 48 = 12 · 7 + ___ = 15 = 8 · 24 + ___ = 28 = 4 · 39 + ___ = 44 = 5 · 24 + ___ = 31 = 7 · 30 + ___ = 39 = 9 · 19 + ___ = 25 = 6 · 24 + ___ = 35 = 11 · 38 + ___ = 40 = 2 · 7 + ___ = 8 = 1