

The Case of the Golden Shell

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

Detective: _____ Date: _____

A sneaky cat-mermaid took the Golden Shell from the Royal Fish Keeper! Use your math skills to help the Purr-maids 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 Sea Thief Cat is _____

Possible suspects

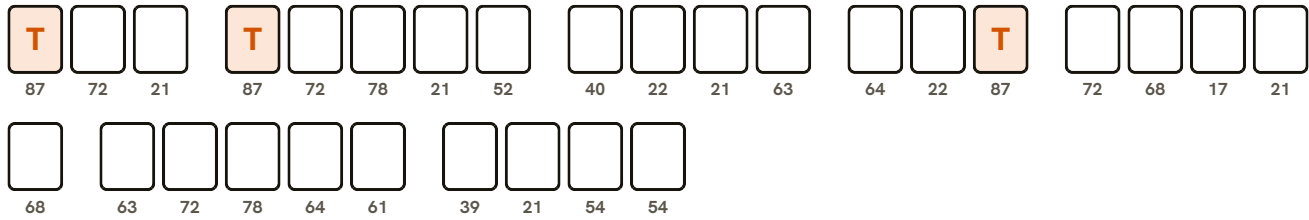
Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	MAGIC POWER	FAVORITE TOY	PAW PREFERENCE	TAIL FUR COLOR	SECRET FEAR
Mimi	shell shield	shiny bell	right paw writer	black tail fur	loud dog barks
Finny	shell shield	laser toy	right paw writer	orange tail fur	loud dog barks
Pearl	kelp lasso	shiny bell	left paw writer	black tail fur	bright lights
Tailer	pearl blast	catnip mouse	right paw writer	orange tail fur	squirting water
Toby	pearl blast	laser toy	right paw writer	black tail fur	loud dog barks
Fluffy	coral dash	yarn ball	left paw writer	white tail fur	squirting water
Patch	pearl blast	feather wand	left paw writer	black tail fur	bright lights
Barnaby	bubble magic	catnip mouse	right paw writer	orange tail fur	loud dog barks
Ocean	bubble magic	catnip mouse	right paw writer	black tail fur	loud dog barks
Mittens	bubble magic	laser toy	right paw writer	black tail fur	squirting water
Kiwi	kelp lasso	catnip mouse	left paw writer	black tail fur	loud dog barks
Shelly	kelp lasso	yarn ball	right paw writer	black tail fur	bright lights
Whiskers	kelp lasso	yarn ball	right paw writer	orange tail fur	loud dog barks
Coral	pearl blast	yarn ball	right paw writer	black tail fur	loud dog barks
Sandy	coral dash	laser toy	right paw writer	white tail fur	squirting water
Bubbles	pearl blast	yarn ball	left paw writer	black tail fur	bright lights
Pip	coral dash	shiny bell	right paw writer	black tail fur	bright lights
Marina	shell shield	shiny bell	right paw writer	white tail fur	bright lights
Salty	coral dash	shiny bell	left paw writer	white tail fur	squirting water
Slick	kelp lasso	feather wand	right paw writer	black tail fur	loud dog barks
Paws	shell shield	catnip mouse	right paw writer	orange tail fur	squirting water

CLUE 1 Place value

Look at this seashell chart. The digits tell us the secret room number. This clue helps us find the thief.

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



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

What number has 2 tens and 1 one? → **E**

What number has 2 tens and 2 ones? → **O**

What number has 6 tens and 3 ones? → **S**

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

What number has 3 tens and 9 ones? → **B**

What number has 1 ten and 7 ones? → **V**

What number has 6 tens and 4 ones? → **N**

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

What number has 7 tens and 2 ones? → **H**

What number has 5 tens and 4 ones? → **L**

What number has 7 tens and 8 ones? → **I**

What number has 6 tens and 8 ones? → **A**

What number has 5 tens and 2 ones? → **F**

Scratch space:

CLUE 2 Addition

Let us add up the shiny pearls we found in the sand. When we count them all together, we get a new clue.

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

T			T									T					
20	17	4	20	17	9	4	2	17	4	16	3	20	17	4			
								T						T			
13	8	19	18	6	7	9	7	20	17	4	9	8	8	9	11	17	20
14	19	10															

$11 + 9 = \square \rightarrow$ T	$8 + 11 = \square \rightarrow$ A	$8 + 3 = \square \rightarrow$ G	
$4 + 6 = \square \rightarrow$ W	$9 + 5 = \square \rightarrow$ P	$6 + 3 = \square \rightarrow$ I	$5 + 3 = \square \rightarrow$ R
$12 + 6 = \square \rightarrow$ Y	$2 + 4 = \square \rightarrow$ O	$5 + 2 = \square \rightarrow$ N	
$7 + 10 = \square \rightarrow$ H	$10 + 3 = \square \rightarrow$ C	$10 + 6 = \square \rightarrow$ L	
$2 + 1 = \square \rightarrow$ D	$2 + 2 = \square \rightarrow$ E	$1 + 1 = \square \rightarrow$ F	

Scratch space:

CLUE 3

Subtraction

The thief dropped some starfish. If we take away the broken ones, we will see a hidden clue on the sand.

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

T			T															
10	1	18	10	1	16	18	17	14	13	2	13	9	13	8	17	14	5	3
19	5	4	12	12	5	6	7	13	14	11	15							

$15 - 5 = \square \rightarrow \boxed{\text{T}}$

$19 - 5 = \square \rightarrow \boxed{\text{R}}$

$8 - 2 = \square \rightarrow \boxed{\text{G}}$

$19 - 2 = \square \rightarrow \boxed{\text{F}}$

$14 - 2 = \square \rightarrow \boxed{\text{D}}$

$17 - 8 = \square \rightarrow \boxed{\text{W}}$

$7 - 4 = \square \rightarrow \boxed{\text{M}}$

$9 - 1 = \square \rightarrow \boxed{\text{Y}}$

$8 - 1 = \square \rightarrow \boxed{\text{B}}$

$20 - 4 = \square \rightarrow \boxed{\text{I}}$

$6 - 5 = \square \rightarrow \boxed{\text{H}}$

$20 - 7 = \square \rightarrow \boxed{\text{A}}$

$11 - 9 = \square \rightarrow \boxed{\text{N}}$

$8 - 4 = \square \rightarrow \boxed{\text{U}}$

$16 - 5 = \square \rightarrow \boxed{\text{K}}$

$20 - 1 = \square \rightarrow \boxed{\text{L}}$

$19 - 1 = \square \rightarrow \boxed{\text{E}}$

$11 - 6 = \square \rightarrow \boxed{\text{O}}$

$16 - 1 = \square \rightarrow \boxed{\text{S}}$

Scratch space:

CLUE 4 Skip counting

Follow the paw prints! Count them by twos to reach the end of the path and find this clue.

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

W																
42	22	6	65	24	33	40	20	10	100	60	8	6	24	130	65	33
36	18	22	140	65	10	40	22	33	28	18	22	10	10			

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, __, 45, 48 → **W**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, __, 27, 30 → **U**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, __, 65, 70 → **C**

Skip-count by 2s. Fill the blank: 2, 4, __, 8, 10 → **F**

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, __, 24, 26 → **E**

Skip-count by 10s. Fill the blank: 10, 20, 30, __, 50, 60 → **D**

Skip-count by 5s. Fill the blank: 5, 10, 15, __, 25, 30 → **B**

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, __, 30, 32 → **S**

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

Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 → **K**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, __, 21, 24 → **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 2s. Fill the blank: 2, 4, 6, 8, __, 12, 14 → **L**

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

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

Scratch space:

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

We need ten shiny rocks to open the treasure box. We only have six. Solve for the missing number to get the final clue.

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:

$5 + \underline{\quad} = 16$

$1 + \underline{\quad} = 8$

$6 + \underline{\quad} = 12$

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

$6 + \underline{\quad} = 11$

$1 + \underline{\quad} = 5$

$9 + \underline{\quad} = 17$

$8 + \underline{\quad} = 17$

$9 + \underline{\quad} = 10$

$4 + \underline{\quad} = 6$

$2 + \underline{\quad} = 5$

Step 2 - cross out the sentence with each answer:

1. The villain blocked the guard with a shell shield, then shined a red laser toy on the floor.
2. The villain dashed through the coral reef, then waved a feather wand in the air.
3. The villain blocked the guard with a shell shield, then dropped a big green yarn ball.
4. The villain threw a kelp lasso to grab the treasure, then shined a red laser toy on the floor.
5. The villain shot a blast of pearls to distract everyone, then rang a shiny bell to celebrate.
6. The villain threw a kelp lasso to grab the treasure, then waved a feather wand in the air.
7. The villain blew big bubbles to block the path, then tossed a catnip mouse into the weeds.
8. The villain threw a kelp lasso to grab the treasure, then tossed a catnip mouse into the weeds.
9. The villain dashed through the coral reef, then dropped a big green yarn ball.
10. The villain shot a blast of pearls to distract everyone, then waved a feather wand in the air.
11. The villain shot a blast of pearls to distract everyone, then shined a red laser toy on the floor.
12. The villain shot a blast of pearls to distract everyone, then dropped a big green yarn ball.

Answer Key

The Case of the Golden Shell

Culprit: Coral

pearl blast · yarn ball · right paw writer · black tail fur · loud dog barks

Trail: Start 21 → Clue 1 16 → Clue 2 12 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE THIEF DOES NOT HAVE A SHINY BELL"

What number has 8 tens and 7 ones? = 87 (T) · What number has 2 tens and 1 one? = 21 (E) · What number has 2 tens and 2 ones? = 22 (O) · What number has 6 tens and 3 ones? = 63 (S) · What number has 6 tens and 1 one? = 61 (Y) · What number has 3 tens and 9 ones? = 39 (B) · What number has 1 ten and 7 ones? = 17 (V) · What number has 6 tens and 4 ones? = 64 (N) · What number has 4 tens and 0 ones? = 40 (D) · What number has 7 tens and 2 ones? = 72 (H) · What number has 5 tens and 4 ones? = 54 (L) · What number has 7 tens and 8 ones? = 78 (I) · What number has 6 tens and 8 ones? = 68 (A) · What number has 5 tens and 2 ones? = 52 (F)

Clue 2 (Addition): "THE THIEF HELD THE CRAYON IN THEIR RIGHT PAW"

$11 + 9 = 20$ (T) · $8 + 11 = 19$ (A) · $8 + 3 = 11$ (G) · $4 + 6 = 10$ (W) · $9 + 5 = 14$ (P) · $6 + 3 = 9$ (I) · $5 + 3 = 8$ (R) · $12 + 6 = 18$ (Y) · $2 + 4 = 6$ (O) · $5 + 2 = 7$ (N) · $7 + 10 = 17$ (H) · $10 + 3 = 13$ (C) · $10 + 6 = 16$ (L) · $2 + 1 = 3$ (D) · $2 + 2 = 4$ (E) · $1 + 1 = 2$ (F)

Clue 3 (Subtraction): "THE THIEF RAN AWAY FROM LOUD DOG BARKS"

$15 - 5 = 10$ (T) · $19 - 5 = 14$ (R) · $8 - 2 = 6$ (G) · $19 - 2 = 17$ (F) · $14 - 2 = 12$ (D) · $17 - 8 = 9$ (W) · $7 - 4 = 3$ (M) · $9 - 1 = 8$ (Y) · $8 - 1 = 7$ (B) · $20 - 4 = 16$ (I) · $6 - 5 = 1$ (H) · $20 - 7 = 13$ (A) · $11 - 9 = 2$ (N) · $8 - 4 = 4$ (U) · $16 - 5 = 11$ (K) · $20 - 1 = 19$ (L) · $19 - 1 = 18$ (E) · $11 - 6 = 5$ (O) · $16 - 1 = 15$ (S)

Clue 4 (Skip counting): "WE FOUND BLACK FUR ON THE GOLDEN SHELL"

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, __, 45, 48 = 42 (W) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, __, 27, 30 = 24 (U) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, __, 65, 70 = 60 (C) · Skip-count by 2s. Fill the blank: 2, 4, __, 8, 10 = 6 (F) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, __, 140, 150 = 130 (R) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, __, 24, 26 = 22 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, __, 50, 60 = 40 (D) · Skip-count by 5s. Fill the blank: 5, 10, 15, __, 25, 30 = 20 (B) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 = 65 (O) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, __, 30, 32 = 28 (S) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, __, 36, 39 = 33 (N) · Skip-count by 2s. Fill the blank: 2, 4, 6, __, 10, 12 = 8 (K) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, __, 21, 24 = 18 (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 2s. Fill the blank: 2, 4, 6, 8, __, 12, 14 = 10 (L) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 = 36 (T) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, __, 110, 120 = 100 (A)

Clue 5 (Missing addends): surviving statement is box 12 → Coral

$5 + \underline{\quad} = 16 = 11$ · $1 + \underline{\quad} = 8 = 7$ · $6 + \underline{\quad} = 12 = 6$ · $2 + \underline{\quad} = 12 = 10$ · $6 + \underline{\quad} = 11 = 5$ · $1 + \underline{\quad} = 5 = 4$ · $9 + \underline{\quad} = 17 = 8$ · $8 + \underline{\quad} = 17 = 9$ · $9 + \underline{\quad} = 10 = 1$ · $4 + \underline{\quad} = 6 = 2$ · $2 + \underline{\quad} = 5 = 3$