



The Rustreef Reef Mystery

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

Detective: _____ Date: _____

Oh no! The golden Pearl of Rustreef is gone. A bad robo-mermaid took it from the Reef Mayor. Detective Diver must follow the clues and find them!

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 bad robo-mermaid 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 TOOL	DOMINANT HAND	HAIR MATERIAL	SYSTEM WEAKNESS
Turbine	laser tail	rust beam	left handed	pink kelp	sand spray
Sparky	laser tail	oil slick	left handed	gold foil	sand spray
Widget	laser tail	rust beam	right handed	pink kelp	magnet wand
Sprocket	metal claw	rust beam	left handed	gold foil	fresh water
Rusty	bubble shield	oil slick	right handed	gold foil	fresh water
Shelly	metal claw	net launcher	left handed	gold foil	fresh water
Beep	turbo fin	scrap magnet	left handed	gold foil	fresh water
Waverly	sonar song	spark shock	left handed	gold foil	fresh water
Coral	bubble shield	scrap magnet	left handed	pink kelp	fresh water
Cog	bubble shield	oil slick	right handed	pink kelp	fresh water
Gasket	turbo fin	oil slick	right handed	gold foil	magnet wand
Finley	metal claw	oil slick	left handed	gold foil	magnet wand
Melody	laser tail	net launcher	left handed	gold foil	fresh water
Marina	metal claw	scrap magnet	left handed	neon wire	fresh water
Splash	sonar song	rust beam	left handed	gold foil	fresh water
Circuit	sonar song	rust beam	right handed	neon wire	sand spray
Bolt	turbo fin	spark shock	right handed	neon wire	fresh water
Ariel	turbo fin	spark shock	left handed	pink kelp	magnet wand
Dynamo	bubble shield	spark shock	right handed	neon wire	sand spray
Sandy	sonar song	rust beam	left handed	neon wire	sand spray
Chip	bubble shield	scrap magnet	right handed	gold foil	magnet wand

CLUE 1 Place value

We look at the escape pod screen. It shows the speed using ones and tens.

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

A 2x10 grid of boxes. The top row contains the following values from left to right: 'T' (orange), 44, 15, 85, 26, 30, 28, 28, 22, 30, 61, 55, 53, 85, 70, 61, 53, 'T' (orange), 44. The bottom row contains the following values from left to right: 83, 70, 85, 'T' (orange), 44, 15, 85, 99, 83, 70, 'T' (orange), 44, 49, 85, 22, 40.

What number has 4 tens and 4 ones? → **T**

What number has 7 tens and 0 ones? → **S**

What number has 5 tens and 5 ones? → **D**

What number has 2 tens and 6 ones? → **V**

What number has 8 tens and 5 ones? → **E**

What number has 9 tens and 9 ones? → **R**

What number has 2 tens and 8 ones? → **L**

What number has 1 ten and 5 ones? → **H**

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

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

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

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

What number has 4 tens and 9 ones? → **B**

What number has 5 tens and 3 ones? →

What number has 3 tens and 0 ones? →

Scratch space:

CLUE 2

Addition

We count the shiny power gears found on the sandy floor to find the total.

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

T																	
25	60	57	33	65	94	94	92	40	78	57	43	25	60	57	44	65	

			T				
63	57	66	25	60	69	29	43

$14 + 11 = \square \rightarrow \boxed{\text{T}}$

$22 + 44 = \square \rightarrow \boxed{\text{F}}$

$10 + 19 = \square \rightarrow \boxed{\text{N}}$

$18 + 42 = \square \rightarrow \boxed{\text{H}}$

$28 + 41 = \square \rightarrow \boxed{\text{A}}$

$14 + 26 = \square \rightarrow \boxed{\text{U}}$

$16 + 28 = \square \rightarrow \boxed{\text{I}}$

$29 + 63 = \square \rightarrow \boxed{\text{K}}$

$31 + 47 = \square \rightarrow \boxed{\text{S}}$

$40 + 17 = \square \rightarrow \boxed{\text{E}}$

$18 + 15 = \square \rightarrow \boxed{\text{C}}$

$24 + 39 = \square \rightarrow \boxed{\text{L}}$

$24 + 41 = \square \rightarrow \boxed{\text{R}}$

$17 + 26 = \square \rightarrow \boxed{\text{D}}$

$53 + 41 = \square \rightarrow \boxed{\text{O}}$

Scratch space:

CLUE 3

Subtraction

Our mini submarine had ten batteries. The villain took some away.

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

F																		
33	52	64	38	54	67	63	50	64	52	66	63	86	64	38	50	54	64	66

57	47	55	50	65	54

$42 - 9 = \square \rightarrow \text{F}$

$106 - 20 = \square \rightarrow \text{K}$

$84 - 30 = \square \rightarrow \text{H}$

$48 - 10 = \square \rightarrow \text{S}$

$83 - 31 = \square \rightarrow \text{R}$

$73 - 16 = \square \rightarrow \text{G}$

$100 - 34 = \square \rightarrow \text{M}$

$85 - 22 = \square \rightarrow \text{A}$

$73 - 9 = \square \rightarrow \text{E}$

$81 - 16 = \square \rightarrow \text{C}$

$78 - 23 = \square \rightarrow \text{I}$

$74 - 27 = \square \rightarrow \text{L}$

$84 - 17 = \square \rightarrow \text{W}$

$51 - 1 = \square \rightarrow \text{T}$

Scratch space:

CLUE 4 Skip counting

The bad bot left a trail of glowing pearls. They are grouped in twos.

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

W														
21	36	24	45	60	42	27	12	45	35	27	24	45	28	35
70	30	36	130	110	36	42	36							

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, __, 24, 27 → **W**

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

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, __, 14, 16 → **G**

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

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

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

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

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

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

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

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

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

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

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

Scratch space:

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

The sea vault needs eight power cards. We only have five so far.

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:

$7 + \underline{\quad} = 15$

$9 + \underline{\quad} = 18$

$10 + \underline{\quad} = 21$

$2 + \underline{\quad} = 8$

$10 + \underline{\quad} = 20$

$10 + \underline{\quad} = 14$

$6 + \underline{\quad} = 13$

$5 + \underline{\quad} = 6$

$9 + \underline{\quad} = 11$

$8 + \underline{\quad} = 11$

$7 + \underline{\quad} = 12$

Step 2 - cross out the sentence with each answer:

1. The villain sings a loud sonar song, then pulls some heavy scrap metal.
2. The villain grabs things with a metal claw, then shocks a clam with a spark.
3. The villain creates a giant bubble shield, then fires a hot rust beam.
4. The villain flashes a bright laser tail, then shocks a clam with a spark.
5. The villain grabs things with a metal claw, then pulls some heavy scrap metal.
6. The villain creates a giant bubble shield, then shoots a sticky net launcher.
7. The villain flashes a bright laser tail, then pulls some heavy scrap metal.
8. The villain sings a loud sonar song, then shocks a clam with a spark.
9. The villain flashes a bright laser tail, then shoots a sticky net launcher.
10. The villain sings a loud sonar song, then shoots a sticky net launcher.
11. The villain jets away with a turbo fin, then pulls some heavy scrap metal.
12. The villain grabs things with a metal claw, then shoots a sticky net launcher.

Answer Key

The Rustreef Reef Mystery

Culprit: Shelly

metal claw · net launcher · left handed · gold foil · fresh water

Trail: Start 21 → Clue 1 15 → Clue 2 9 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT USE THE RUST BEAM"

What number has 4 tens and 4 ones? = 44 (T) · What number has 7 tens and 0 ones? = 70 (S) · What number has 5 tens and 5 ones? = 55 (D) · What number has 2 tens and 6 ones? = 26 (V) · What number has 8 tens and 5 ones? = 85 (E) · What number has 9 tens and 9 ones? = 99 (R) · What number has 2 tens and 8 ones? = 28 (L) · What number has 1 ten and 5 ones? = 15 (H) · What number has 4 tens and 0 ones? = 40 (M) · What number has 2 tens and 2 ones? = 22 (A) · What number has 8 tens and 3 ones? = 83 (U) · What number has 6 tens and 1 one? = 61 (N) · What number has 4 tens and 9 ones? = 49 (B) · What number has 5 tens and 3 ones? = 53 (O) · What number has 3 tens and 0 ones? = 30 (I)

Clue 2 (Addition): "THE CROOK USED THEIR LEFT HAND"

$14 + 11 = 25$ (T) · $22 + 44 = 66$ (F) · $10 + 19 = 29$ (N) · $18 + 42 = 60$ (H) · $28 + 41 = 69$ (A) · $14 + 26 = 40$ (U) · $16 + 28 = 44$ (I) · $29 + 63 = 92$ (K) · $31 + 47 = 78$ (S) · $40 + 17 = 57$ (E) · $18 + 15 = 33$ (C) · $24 + 39 = 63$ (L) · $24 + 41 = 65$ (R) · $17 + 26 = 43$ (D) · $53 + 41 = 94$ (O)

Clue 3 (Subtraction): "FRESH WATER MAKES THEM GLITCH"

$42 - 9 = 33$ (F) · $106 - 20 = 86$ (K) · $84 - 30 = 54$ (H) · $48 - 10 = 38$ (S) · $83 - 31 = 52$ (R) · $73 - 16 = 57$ (G) · $100 - 34 = 66$ (M) · $85 - 22 = 63$ (A) · $73 - 9 = 64$ (E) · $81 - 16 = 65$ (C) · $78 - 23 = 55$ (I) · $74 - 27 = 47$ (L) · $84 - 17 = 67$ (W) · $51 - 1 = 50$ (T)

Clue 4 (Skip counting): "WE FOUND GOLD FOIL AT THE SCENE"

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

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

$7 + \underline{\quad} = 15 = 8$ · $9 + \underline{\quad} = 18 = 9$ · $10 + \underline{\quad} = 21 = 11$ · $2 + \underline{\quad} = 8 = 6$ · $10 + \underline{\quad} = 20 = 10$ · $10 + \underline{\quad} = 14 = 4$ · $6 + \underline{\quad} = 13 = 7$ · $5 + \underline{\quad} = 6 = 1$ · $9 + \underline{\quad} = 11 = 2$ · $8 + \underline{\quad} = 11 = 3$ · $7 + \underline{\quad} = 12 = 5$