



The Great Undersea Bake-Off Sabotage

Grade 4 math · Rounding, Addition, Subtraction, Multiplication, Division · Reading level grades 7-9

Detective: _____ Date: _____

A disaster has struck the Great Undersea Bake-Off! The legendary Golden Kelp Souffle has been sabotaged just before the judging began. Someone smuggled a batch of sour kelp into the pantries, and the Head Pastry Mermaid needs your help to find the culprit before the coral timers run out.

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 Yeast Bandit is _____

Possible suspects

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

NAME	BAKING SPECIALTY	SIGNATURE TOOL	MIXING HAND	HAIR COLOR	INGREDIENT REPELLENT
Buddy Valastro	shell scaling	pearl timer	right finned mixer	coral pink curls	sour lemon zest
Christina Tosi	steam baking	clam shell scale	right finned mixer	seafoam green locks	sour lemon zest
Guy Fieri	steam baking	kelp spatula	right finned mixer	coral pink curls	salty brine spray
Pearl	sugar sculpting	clam shell scale	left finned mixer	seafoam green locks	salty brine spray
Mary Berry	bubble whisking	clam shell scale	left finned mixer	kelp brown braids	salty brine spray
Sandy	shell scaling	pearl timer	left finned mixer	coral pink curls	burnt cocoa powder
Bobby Flay	bubble whisking	kelp spatula	right finned mixer	seafoam green locks	burnt cocoa powder
Duff Goldman	steam baking	clam shell scale	right finned mixer	coral pink curls	burnt cocoa powder
Ariel	bubble whisking	clam shell scale	right finned mixer	seafoam green locks	sour lemon zest
Melody	steam baking	pearl timer	left finned mixer	seafoam green locks	sour lemon zest
Emeril	shell scaling	kelp spatula	right finned mixer	seafoam green locks	salty brine spray
Delphine	bubble whisking	sea glass whisk	right finned mixer	seafoam green locks	salty brine spray
Martha Stewart	shell scaling	coral rolling pin	left finned mixer	coral pink curls	burnt cocoa powder
Gordon Ramsay	sugar sculpting	pearl timer	right finned mixer	kelp brown braids	burnt cocoa powder
Jacques Pepin	shell scaling	coral rolling pin	right finned mixer	seafoam green locks	salty brine spray
Marina	kelp frosting	kelp spatula	right finned mixer	seafoam green locks	sour lemon zest
Shelly	bubble whisking	pearl timer	right finned mixer	seafoam green locks	sour lemon zest
Prue Leith	sugar sculpting	sea glass whisk	right finned mixer	coral pink curls	burnt cocoa powder
Nigella	bubble whisking	sea glass whisk	right finned mixer	coral pink curls	salty brine spray
Coralia	kelp frosting	kelp spatula	right finned mixer	coral pink curls	salty brine spray
Oceana	kelp frosting	clam shell scale	right finned mixer	seafoam green locks	sour lemon zest

CLUE 1 Rounding

The kitchen's automated flour scale was damaged and could only output weights rounded to the nearest ten kilograms. By analyzing the estimated flour levels, you deduce a critical detail about the suspect's gear.

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

The diagram shows the distribution of 2000 units across 10 categories. The categories are represented by boxes, some of which are shaded orange and labeled 'T'.

Category	Value	Shaded	Label
1	2000	Yes	T
2	90	No	
3	7000	No	
4	3000	No	
5	230	No	
6	3700	No	
7	1300	No	
8	30	No	
9	2000	Yes	T
10	1300	No	
11	9000	No	
12	7000	No	
13	5000	No	
14	3700	No	
15	9000	No	
16	2000	Yes	T
17	1100	No	
18	5000	No	
19	7000	No	
20	230	No	
21	1700	No	
22	7000	No	
23	500	No	
24	4300	No	
25	5000	No	
26	4300	No	
27	230	No	
28	2000	Yes	T
29	1100	No	
30	500	No	
31	230	No	

Round 2,285 to the nearest thousand $\rightarrow$ **T**

Round 90 to the nearest ten $\rightarrow$ **H**

Round 4,339 to the nearest hundred $\rightarrow$ **P**

Round 3,651 to the nearest hundred $\rightarrow$ **N**

Round 4,689 to the nearest thousand $\rightarrow$ **S**

Round 229 to the nearest ten $\rightarrow$ **A**

Round 6,678 to the nearest thousand → **E**

Round 1,698 to the nearest hundred $\rightarrow$ **K**

Round 30 to the nearest ten $\rightarrow$

Round 1,119 to the nearest hundred → **U**

Round 1,299 to the nearest hundred → **D**

Round 2,549 to the nearest thousand → **B**

Round 469 to the nearest hundred $\rightarrow$ **L**

Round 9,140 to the nearest thousand $\rightarrow$

Scratch space:

CLUE 2 Addition

To find the telltale physical habits of the saboteur, you add up the total weight of the discarded salt bags found scattered across the prep stations.

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

T																				
3984	5924	4817	2183	2290	2183	4106	4817	9661	3984	3674	8325	2217	4817	2183	5107	8065	9308	6876		
8365	8325	3984	5924	3984	5924	4817	8325	6997	6997	8325	5639	5924	3984	2907	8325	8065				

$1885 + 2099 = \square \rightarrow \text{T}$	$2664 + 5701 = \square \rightarrow \text{W}$	$2482 + 5583 = \square \rightarrow \text{N}$
$2355 + 2462 = \square \rightarrow \text{E}$	$3939 + 5722 = \square \rightarrow \text{C}$	$1964 + 3960 = \square \rightarrow \text{H}$
$4848 + 2149 = \square \rightarrow \text{R}$	$2744 + 5581 = \square \rightarrow \text{I}$	$2139 + 1535 = \square \rightarrow \text{M}$
$1510 + 673 = \square \rightarrow \text{S}$	$1645 + 1262 = \square \rightarrow \text{F}$	$2089 + 3018 = \square \rightarrow \text{O}$
$2565 + 1541 = \square \rightarrow \text{P}$	$2814 + 2825 = \square \rightarrow \text{G}$	$4082 + 2794 = \square \rightarrow \text{Y}$
$4794 + 4514 = \square \rightarrow \text{L}$	$1453 + 837 = \square \rightarrow \text{U}$	$1477 + 740 = \square \rightarrow \text{X}$

Scratch space:

CLUE 3
Subtraction

The baker records the temperatures of the ovens before and after the incident. Subtracting the lower temperature from the higher one reveals how the villain reacted to your defense.

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

T			T												T		
4666	3964	3012	4666	3964	4649	3012	1716	7407	3675	8829	1716	7407	7805	2395	4666	3964	3012
3283	7805	5741	7407	4072	3012	2395	7805	8829	8751	3012	3283	4666					

$5561 - 895 = \boxed{} \rightarrow \boxed{T}$

$12522 - 3693 = \boxed{} \rightarrow \boxed{N}$

$6162 - 2198 = \boxed{} \rightarrow \boxed{H}$

$4823 - 1811 = \boxed{} \rightarrow \boxed{E}$

$4714 - 65 = \boxed{} \rightarrow \boxed{I}$

$7217 - 1476 = \boxed{} \rightarrow \boxed{U}$

$8541 - 4866 = \boxed{} \rightarrow \boxed{A}$

$4647 - 2931 = \boxed{} \rightarrow \boxed{F}$

$12257 - 4452 = \boxed{} \rightarrow \boxed{O}$

$3678 - 1283 = \boxed{} \rightarrow \boxed{M}$

$7019 - 3736 = \boxed{} \rightarrow \boxed{S}$

$10002 - 1251 = \boxed{} \rightarrow \boxed{Z}$

$8886 - 4814 = \boxed{} \rightarrow \boxed{L}$

$8023 - 616 = \boxed{} \rightarrow \boxed{R}$

Scratch space:

CLUE 4

Multiplication facts (1-12)

By calculating the grid of ruined cupcakes arranged in neat rows and columns, you determine the exact substance that the saboteur desperately avoided.

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

W																			
21	14	30	11	35	25	6	121	14	54	30	11	54	40	32	49	14	14	25	
16	11	96	70	121	54	81	81	7	14	121	96	14	25	14					

$3 \times 7 = \square \rightarrow \boxed{\text{W}}$

$2 \times 7 = \square \rightarrow \boxed{\text{E}}$

$11 \times 11 = \square \rightarrow \boxed{\text{S}}$

$10 \times 7 = \square \rightarrow \boxed{\text{K}}$

$11 \times 1 = \square \rightarrow \boxed{\text{O}}$

$6 \times 1 = \square \rightarrow \boxed{\text{D}}$

$5 \times 7 = \square \rightarrow \boxed{\text{U}}$

$4 \times 8 = \square \rightarrow \boxed{\text{G}}$

$9 \times 9 = \square \rightarrow \boxed{\text{T}}$

$7 \times 7 = \square \rightarrow \boxed{\text{R}}$

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

$2 \times 8 = \square \rightarrow \boxed{\text{L}}$

$3 \times 10 = \square \rightarrow \boxed{\text{F}}$

$8 \times 5 = \square \rightarrow \boxed{\text{M}}$

$12 \times 8 = \square \rightarrow \boxed{\text{C}}$

$6 \times 9 = \square \rightarrow \boxed{\text{A}}$

$1 \times 7 = \square \rightarrow \boxed{\text{H}}$

Scratch space:

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

A stash of sugar pearls was evenly divided among several storage jars. Dividing the total count reveals the final trace of physical evidence left behind on the counter.

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:

$36 \div 6 = \boxed{}$

$80 \div 10 = \boxed{}$

$7 \div 7 = \boxed{}$

$77 \div 11 = \boxed{}$

$63 \div 7 = \boxed{}$

$6 \div 2 = \boxed{}$

$120 \div 10 = \boxed{}$

$20 \div 2 = \boxed{}$

$33 \div 3 = \boxed{}$

$40 \div 8 = \boxed{}$

$14 \div 7 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain steams a dozen pearl buns, then weighs out starry salt on a clam scale.
2. The villain steams a dozen pearl buns, then scrapes the mixing bowl with a kelp spatula.
3. The villain bakes a towering kelp cake, then scrapes the mixing bowl with a kelp spatula.
4. The villain whisks a massive bowl of sea foam, then weighs out starry salt on a clam scale.
5. The villain steams a dozen pearl buns, then whips up meringue with a sea glass whisk.
6. The villain bakes a towering kelp cake, then weighs out starry salt on a clam scale.
7. The villain steams a dozen pearl buns, then rolls out seaweed dough with a coral pin.
8. The villain whisks a massive bowl of sea foam, then tracks the bake time with a pearl timer.
9. The villain bakes a towering kelp cake, then tracks the bake time with a pearl timer.
10. The villain sculpts an intricate sugar reef, then rolls out seaweed dough with a coral pin.
11. The villain sculpts an intricate sugar reef, then weighs out starry salt on a clam scale.
12. The villain steams a dozen pearl buns, then tracks the bake time with a pearl timer.

Answer Key

The Great Undersea Bake-Off Sabotage

Culprit: Ariel

bubble whisking · clam shell scale · right finned mixer · seafoam green locks · sour lemon zest

Trail: Start 21 → Clue 1 16 → Clue 2 11 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE BANDIT DOES NOT USE A KELP SPATULA"

Round 2,285 to the nearest thousand = 2000 (T) · Round 90 to the nearest ten = 90 (H) · Round 4,339 to the nearest hundred = 4300 (P) · Round 3,651 to the nearest hundred = 3700 (N) · Round 4,689 to the nearest thousand = 5000 (S) · Round 229 to the nearest ten = 230 (A) · Round 6,678 to the nearest thousand = 7000 (E) · Round 1,698 to the nearest hundred = 1700 (K) · Round 30 to the nearest ten = 30 (I) · Round 1,119 to the nearest hundred = 1100 (U) · Round 1,299 to the nearest hundred = 1300 (D) · Round 2,549 to the nearest thousand = 3000 (B) · Round 469 to the nearest hundred = 500 (L) · Round 9,140 to the nearest thousand = 9000 (O)

Clue 2 (Addition): "THE SUSPECT MIXES ONLY WITH THEIR RIGHT FIN"

1885 + 2099 = 3984 (T) · 2664 + 5701 = 8365 (W) · 2482 + 5583 = 8065 (N) · 2355 + 2462 = 4817 (E) · 3939 + 5722 = 9661 (C) · 1964 + 3960 = 5924 (H) · 4848 + 2149 = 6997 (R) · 2744 + 5581 = 8325 (I) · 2139 + 1535 = 3674 (M) · 1510 + 673 = 2183 (S) · 1645 + 1262 = 2907 (F) · 2089 + 3018 = 5107 (O) · 2565 + 1541 = 4106 (P) · 2814 + 2825 = 5639 (G) · 4082 + 2794 = 6876 (Y) · 4794 + 4514 = 9308 (L) · 1453 + 837 = 2290 (U) · 1477 + 740 = 2217 (X)

Clue 3 (Subtraction): "THE THIEF RAN FROM THE SOUR LEMON ZEST"

5561 - 895 = 4666 (T) · 12522 - 3693 = 8829 (N) · 6162 - 2198 = 3964 (H) · 4823 - 1811 = 3012 (E) · 4714 - 65 = 4649 (I) · 7217 - 1476 = 5741 (U) · 8541 - 4866 = 3675 (A) · 4647 - 2931 = 1716 (F) · 12257 - 4452 = 7805 (O) · 3678 - 1283 = 2395 (M) · 7019 - 3736 = 3283 (S) · 10002 - 1251 = 8751 (Z) · 8886 - 4814 = 4072 (L) · 8023 - 616 = 7407 (R)

Clue 4 (Multiplication facts (1-12)): "WE FOUND SEAFOAM GREEN LOCKS AT THE SCENE"

$3 \times 7 = 21$ (W) · $2 \times 7 = 14$ (E) · $11 \times 11 = 121$ (S) · $10 \times 7 = 70$ (K) · $11 \times 1 = 11$ (O) · $6 \times 1 = 6$ (D) · $5 \times 7 = 35$ (U) · $4 \times 8 = 32$ (G) · $9 \times 9 = 81$ (T) · $7 \times 7 = 49$ (R) · $5 \times 5 = 25$ (N) · $2 \times 8 = 16$ (L) · $3 \times 10 = 30$ (F) · $8 \times 5 = 40$ (M) · $12 \times 8 = 96$ (C) · $6 \times 9 = 54$ (A) · $1 \times 7 = 7$ (H)

Clue 5 (Division facts (1-12)): surviving statement is box 4 → Ariel

$36 \div 6 = 6$ · $80 \div 10 = 8$ · $7 \div 7 = 1$ · $77 \div 11 = 7$ · $63 \div 7 = 9$ · $6 \div 2 = 3$ · $120 \div 10 = 12$ · $20 \div 2 = 10$ · $33 \div 3 = 11$ · $40 \div 8 = 5$ · $14 \div 7 = 2$