# The Case of the Smelly-Sock Bandit

Grade 4 math · Rounding, Addition, Subtraction, Multiplication, Division · Reading level grades 3-4

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

Oh no! Someone blasted a mega-stinky cloud and stole the Golden Nose trophy from the vault. The only clue left behind is a giant, silly face drawn on the chalkboard. We need to find which student is the real culprit!

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 Fart-Face Phantom is** _____

## Possible suspects

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

| NAME | GAS BLAST | FACE TRICK | CLASS TYPE | HAIR STYLE | SCENT BLOCK |
|---|---|---|---|---|---|
| **Penny Puff** | rotten egg blast | double chin wiggle | gassy boy | frizzy purple curls | ripe strawberry mist |
| **Nora Nose** | sour garbage burp | crossed eye stare | gassy boy | frizzy purple curls | sweet lavender perfume |
| **Gary Gas** | burnt popcorn fog | eyebrow wiggle dance | gassy girl | neon green spikes | sweet lavender perfume |
| **Toby Trud** | moldy cheese cloud | crossed eye stare | gassy girl | slimy orange mohawk | fresh peppermint spray |
| **Benny Blow** | sour garbage burp | eyebrow wiggle dance | gassy girl | neon green spikes | sweet lavender perfume |
| **Fiona Fart** | rotten egg blast | eyebrow wiggle dance | gassy girl | slimy orange mohawk | sweet lavender perfume |
| **Wendy Wind** | sour garbage burp | tongue stick out | gassy boy | neon green spikes | sweet lavender perfume |
| **Molly Moldy** | sour garbage burp | tongue stick out | gassy girl | slimy orange mohawk | sweet lavender perfume |
| **Pip Phew** | sour garbage burp | crossed eye stare | gassy boy | slimy orange mohawk | sweet lavender perfume |
| **Billy Belch** | rotten egg blast | cheek balloon pop | gassy girl | frizzy purple curls | ripe strawberry mist |
| **Sammy Stink** | burnt popcorn fog | eyebrow wiggle dance | gassy boy | frizzy purple curls | fresh peppermint spray |
| **Barney Bubble** | sour garbage burp | cheek balloon pop | gassy boy | frizzy purple curls | sweet lavender perfume |
| **Tommy Toot** | moldy cheese cloud | crossed eye stare | gassy girl | slimy orange mohawk | sweet lavender perfume |
| **Sally Sniff** | burnt popcorn fog | double chin wiggle | gassy girl | slimy orange mohawk | fresh peppermint spray |
| **Clara Cloud** | burnt popcorn fog | double chin wiggle | gassy girl | slimy orange mohawk | sweet lavender perfume |
| **Bella Blast** | moldy cheese cloud | cheek balloon pop | gassy girl | frizzy purple curls | ripe strawberry mist |
| **Buster Burp** | stinky broccoli puff | cheek balloon pop | gassy girl | neon green spikes | sweet lavender perfume |
| **Lily Leak** | rotten egg blast | eyebrow wiggle dance | gassy girl | frizzy purple curls | fresh peppermint spray |
| **Suzy Scent** | sour garbage burp | cheek balloon pop | gassy boy | frizzy purple curls | fresh peppermint spray |
| **Polly Pop** | sour garbage burp | tongue stick out | gassy boy | slimy orange mohawk | sweet lavender perfume |
| **Danny Draft** | stinky broccoli puff | double chin wiggle | gassy girl | slimy orange mohawk | sweet lavender perfume |

## CLUE 1 Rounding

> We checked the academy Stink-o-Meter. The digital screen only shows numbers rounded to the nearest ten, but we can still use it to narrow down our suspects.

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


| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Round 3,111 to the nearest hundred | | T | Round 3,244 to the nearest thousand | | P | Round 4,668 to the nearest hundred | | H |
| Round 67,790 to the nearest ten thousand | | E | Round 18 to the nearest ten | | B | Round 153 to the nearest hundred | | N |
| Round 308 to the nearest ten | | D | Round 46 to the nearest ten | | R | Round 290 to the nearest hundred | | Y |
| Round 235,354 to the nearest hundred thousand | | C | Round 470 to the nearest ten | | W | Round 4,739,333 to the nearest hundred thousand | | M |
| Round 538 to the nearest hundred | | S | Round 4,607 to the nearest thousand | | A | Round 143 to the nearest ten | | O |

Scratch space:

## CLUE 2 Addition

> Our detective tallied up all the stolen gas-canisters from the supply closet. Adding up the total empty boxes gives us our next big lead.

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

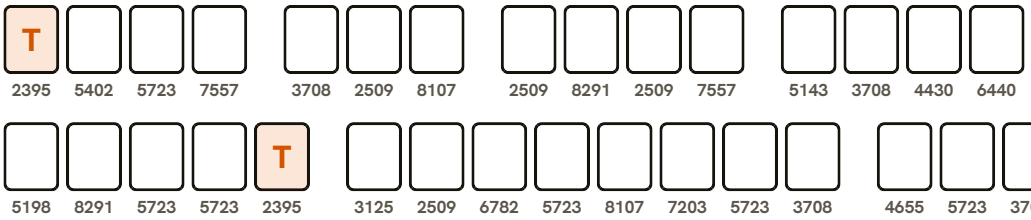

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5007 + 4728 = | | T | 3556 + 4188 = | | W | 4213 + 2614 = | | N |
| 4915 + 2331 = | | I | 2137 + 1543 = | | L | 4867 + 4502 = | | G |
| 4472 + 4823 = | | H | 1271 + 2845 = | | R | 1927 + 1380 = | | S |
| 1848 + 3264 = | | Y | 2405 + 2284 = | | U | 2403 + 4519 = | | A |
| 5477 + 2497 = | | E | 3029 + 3642 = | | D | | | |

Scratch space:

## CLUE 3 Subtraction

> We found a crate of nose-plugs left behind by the getaway team. Subtracting the dirty plugs from the clean ones tells us who we can cross off the list.

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



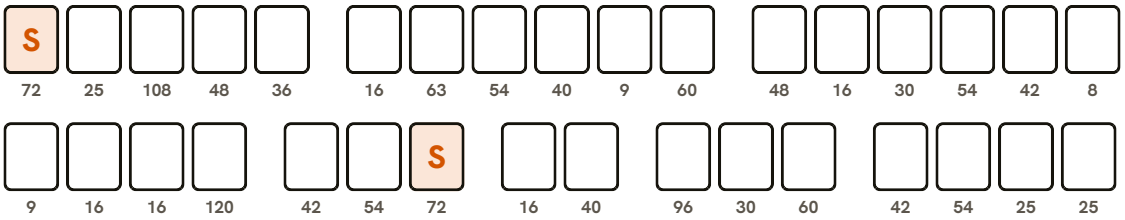

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3547 - 1152 = | | T | 12533 - 4976 = | | Y | 8751 - 4321 = | | O |
| 5652 - 250 = | | H | 3897 - 2631 = | | U | 9675 - 1568 = | | N |
| 8084 - 4376 = | | R | 11593 - 4390 = | | D | 10901 - 2610 = | | W |
| 7428 - 4919 = | | A | 5963 - 1308 = | | P | 8073 - 2350 = | | E |
| 8630 - 3487 = | | F | 9761 - 4563 = | | S | 8738 - 1956 = | | V |
| 8861 - 2421 = | | M | 5004 - 1879 = | | L | | | |

Scratch space:

## CLUE 4 Multiplication facts (1-12)

> The villain ran through the academy greenhouse, knocking over rows of stinky cabbage plants. Multiplying the rows by the plants in each row reveals a secret code.

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




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 × 12 = | | S | 6 × 9 = | | A | 9 × 12 = | | I |
| 6 × 6 = | | Y | 8 × 2 = | | O | 5 × 5 = | | L |
| 5 × 12 = | | E | 3 × 3 = | | G | 6 × 7 = | | W |
| 10 × 12 = | | P | 12 × 8 = | | T | 7 × 9 = | | R |
| 12 × 4 = | | M | 8 × 5 = | | N | 10 × 3 = | | H |
| 8 × 1 = | | K | | | | | | |

Scratch space:

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

> To clear the air, we had to divide our super-strength air fresheners equally among the junior detectives so everyone could sniff out 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:**

| | | |
|---|---|---|
| 108 ÷ 12 = ☐ | 33 ÷ 3 = ☐ | 80 ÷ 10 = ☐ |
| 27 ÷ 9 = ☐ | 2 ÷ 1 = ☐ | 50 ÷ 10 = ☐ |
| 24 ÷ 6 = ☐ | 48 ÷ 4 = ☐ | 7 ÷ 1 = ☐ |
| 60 ÷ 10 = ☐ | 40 ÷ 4 = ☐ | |

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

1. The villain puffs stinky broccoli gas, then wiggles their double chin.
2. The villain puffs stinky broccoli gas, then stares with crossed eyes.
3. The villain leaks moldy cheese clouds, then sticks their tongue out.
4. The villain blasts a rotten egg cloud, then stares with crossed eyes.
5. The villain burps sour garbage mist, then wiggles their double chin.
6. The villain puffs stinky broccoli gas, then pops their balloon cheeks.
7. The villain burps sour garbage mist, then does an eyebrow wiggle dance.
8. The villain burps sour garbage mist, then sticks their tongue out.
9. The villain leaks moldy cheese clouds, then stares with crossed eyes.
10. The villain burps sour garbage mist, then stares with crossed eyes.
11. The villain creates burnt popcorn fog, then wiggles their double chin.
12. The villain creates burnt popcorn fog, then stares with crossed eyes.

TEACHER / PARENT

# Answer Key

The Case of the Smelly-Sock Bandit

## Culprit: Danny Draft

stinky broccoli puff · double chin wiggle · gassy girl · slimy orange mohawk · sweet lavender perfume

Trail: Start 21 → Clue 1 16 → Clue 2 9 → Clue 3 5 → Clue 4 4 → Clue 5 1

### Clue 1 (Rounding): "THE PHANTOM DOES NOT DO THE EYEBROW DANCE"

Round 3,111 to the nearest hundred = 3100 (T) · Round 3,244 to the nearest thousand = 3000 (P) · Round 4,668 to the nearest hundred = 4700 (H) · Round 67,790 to the nearest ten thousand = 70000 (E) · Round 18 to the nearest ten = 20 (B) · Round 153 to the nearest hundred = 200 (N) · Round 308 to the nearest ten = 310 (D) · Round 46 to the nearest ten = 50 (R) · Round 290 to the nearest hundred = 300 (Y) · Round 235,354 to the nearest hundred thousand = 200000 (C) · Round 470 to the nearest ten = 470 (W) · Round 4,739,333 to the nearest hundred thousand = 4700000 (M) · Round 538 to the nearest hundred = 500 (S) · Round 4,607 to the nearest thousand = 5000 (A) · Round 143 to the nearest ten = 140 (O)

### Clue 2 (Addition): "THE WITNESS HEARD A GASSY GIRL LAUGHING"

5007 + 4728 = 9735 (T) · 3556 + 4188 = 7744 (W) · 4213 + 2614 = 6827 (N) · 4915 + 2331 = 7246 (I) · 2137 + 1543 = 3680 (L) · 4867 + 4502 = 9369 (G) · 4472 + 4823 = 9295 (H) · 1271 + 2845 = 4116 (R) · 1927 + 1380 = 3307 (S) · 1848 + 3264 = 5112 (Y) · 2405 + 2284 = 4689 (U) · 2403 + 4519 = 6922 (A) · 5477 + 2497 = 7974 (E) · 3029 + 3642 = 6671 (D)

### Clue 3 (Subtraction): "THEY RAN AWAY FROM SWEET LAVENDER PERFUME"

3547 - 1152 = 2395 (T) · 12533 - 4976 = 7557 (Y) · 8751 - 4321 = 4430 (O) · 5652 - 250 = 5402 (H) · 3897 - 2631 = 1266 (U) · 9675 - 1568 = 8107 (N) · 8084 - 4376 = 3708 (R) · 11593 - 4390 = 7203 (D) · 10901 - 2610 = 8291 (W) · 7428 - 4919 = 2509 (A) · 5963 - 1308 = 4655 (P) · 8073 - 2350 = 5723 (E) · 8630 - 3487 = 5143 (F) · 9761 - 4563 = 5198 (S) · 8738 - 1956 = 6782 (V) · 8861 - 2421 = 6440 (M) · 5004 - 1879 = 3125 (L)

### Clue 4 (Multiplication facts (1-12)): "SLIMY ORANGE MOHAWK GOOP WAS ON THE WALL"

6 × 12 = 72 (S) · 6 × 9 = 54 (A) · 9 × 12 = 108 (I) · 6 × 6 = 36 (Y) · 8 × 2 = 16 (O) · 5 × 5 = 25 (L) · 5 × 12 = 60 (E) · 3 × 3 = 9 (G) · 6 × 7 = 42 (W) · 10 × 12 = 120 (P) · 12 × 8 = 96 (T) · 7 × 9 = 63 (R) · 12 × 4 = 48 (M) · 8 × 5 = 40 (N) · 10 × 3 = 30 (H) · 8 × 1 = 8 (K)

### Clue 5 (Division facts (1-12)): surviving statement is box 1 → Danny Draft

108 ÷ 12 = 9 · 33 ÷ 3 = 11 · 80 ÷ 10 = 8 · 27 ÷ 9 = 3 · 2 ÷ 1 = 2 · 50 ÷ 10 = 5 · 24 ÷ 6 = 4 · 48 ÷ 4 = 12 · 7 ÷ 1 = 7 · 60 ÷ 10 = 6 · 40 ÷ 4 = 10