



The Mystery of the Exploded Nerf Launcher

Grade 5 math · Subtraction, Addition, Multiplication, Fractions of a number · Reading level grades 5-6

Detective: _____ **Date:** _____

Chief Joshua Dax Zeno stood before the smoking, plastic ruins of the backyard's ultimate defense system. The Mega-Blaster Anti-Aircraft Launcher had been overcharged and exploded in a shower of orange springs. We need to find which rival captain sabotaged the launcher before the big neighborhood tournament starts.

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 Saboteur is _____

Possible suspects

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

NAME	PRIMARY BLASTER	SPECIALTY AMMO	SIGHTING EYE	CAMOUFLAGE HAIR	SECRET DEFEATER
Ryder Rex	Sniper Blaster	High Impact Rounds	Left Eye Aim	Electric Blue Hair	Water Hose Spray
Zack Ryder	Rapid Fire Rifle	Mega XL Darts	Right Eye Aim	Electric Blue Hair	Water Hose Spray
Logan Laser	Sniper Blaster	Whistling Darts	Right Eye Aim	Camouflage Green Hair	Water Hose Spray
Leo Ranger	Rapid Fire Rifle	Glow In The Dark Darts	Left Eye Aim	Camouflage Green Hair	Water Hose Spray
Kai Crimson	Dual Pistols	High Impact Rounds	Right Eye Aim	Neon Orange Hair	Jump Rope Trip
Colt Trigger	Dual Pistols	High Impact Rounds	Right Eye Aim	Neon Orange Hair	Water Hose Spray
Dash Danger	Tactical Bow	Mega XL Darts	Left Eye Aim	Camouflage Green Hair	Jump Rope Trip
Mason Maverick	Sniper Blaster	Glow In The Dark Darts	Right Eye Aim	Electric Blue Hair	Water Hose Spray
Axel Stone	Tactical Bow	High Impact Rounds	Left Eye Aim	Camouflage Green Hair	Jump Rope Trip
Jace Jetpack	Tactical Bow	Glow In The Dark Darts	Right Eye Aim	Electric Blue Hair	Jump Rope Trip
Chase Tracker	Tactical Bow	Suction Cup Darts	Right Eye Aim	Camouflage Green Hair	Jump Rope Trip
Duke Detonator	Mega Dart Launcher	High Impact Rounds	Right Eye Aim	Neon Orange Hair	Jump Rope Trip
Jaxson Steele	Sniper Blaster	High Impact Rounds	Right Eye Aim	Camouflage Green Hair	Jump Rope Trip
Wyatt Wild	Rapid Fire Rifle	Glow In The Dark Darts	Right Eye Aim	Camouflage Green Hair	Jump Rope Trip
Zane Shadow	Dual Pistols	Mega XL Darts	Right Eye Aim	Neon Orange Hair	Water Hose Spray
Brody Blade	Tactical Bow	Whistling Darts	Left Eye Aim	Camouflage Green Hair	Jump Rope Trip
Finn Flash	Rapid Fire Rifle	Mega XL Darts	Right Eye Aim	Camouflage Green Hair	Jump Rope Trip
Hunter Pierce	Tactical Bow	Suction Cup Darts	Right Eye Aim	Electric Blue Hair	Water Hose Spray
Xander Swift	Mega Dart Launcher	High Impact Rounds	Right Eye Aim	Neon Orange Hair	Loud Air Horn
Silas Trigger	Mega Dart Launcher	Suction Cup Darts	Right Eye Aim	Camouflage Green Hair	Water Hose Spray
Cole Carbon	Dual Pistols	Suction Cup Darts	Right Eye Aim	Camouflage Green Hair	Jump Rope Trip

CLUE 1

Chief Joshua Dax Zeno finds the blast zone littered with broken springs. By subtracting the damaged coils from the total inventory, we narrow down the suspect list.

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

4649 1133 5688 6991 3139 2378 5780 6991 8886 5688 1788 1059 1059 3139 5688 5246 1788 3139 4649 5529 5246 5688 2638 3644 3139 3083 1059 2378 2874 4649 5246

$5656 - 1007 = \square \rightarrow \boxed{\text{T}}$

$$1729 - 596 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$5833 - 3195 = \boxed{} \rightarrow \boxed{\text{G}}$$

$$7290 - 4416 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$5426 - 3048 = \boxed{} \rightarrow \boxed{\text{A}}$$

$13794 - 4908 = \square \rightarrow \square$

$7058 - 1278 = \square \rightarrow \boxed{\text{M}}$

$5758 - 2114 = \square \rightarrow \boxed{\text{L}}$

$$3991 - 2932 = \boxed{} \rightarrow \boxed{\text{D}}$$

$4622 - 1539 = \square \rightarrow \boxed{\mathbf{W}}$

$11158 - 4167 = \square \rightarrow \boxed{\text{F}}$

$$7301 - 1772 = \boxed{} \rightarrow \boxed{\text{U}}$$

$3935 - 2147 = \square \rightarrow \boxed{\text{N}}$

$$5730 - 484 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$5004 - 1865 = \boxed{} \rightarrow \boxed{0}$$

$7038 - 1350 = \boxed{} \rightarrow \boxed{\text{E}}$

Scratch space:

CLUE 2

A junior deputy counts the plastic shards recovered from the lawn. Adding the blue pieces to the orange pieces reveals a secret number on the suspect chart.

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

The diagram shows 27 numbered boxes arranged in two rows. The top row contains 18 boxes, and the bottom row contains 9 boxes. The boxes are numbered 1 through 27. The boxes containing the letter 'T' are highlighted in orange.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27									

$$4250 + 5213 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$4506 + 2764 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$1482 + 1157 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$3036 + 3350 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$2332 + 4006 = \boxed{} \rightarrow \boxed{\text{U}}$$

$1340 + 873 = \boxed{} \rightarrow \boxed{\text{F}}$

$$2951 + 5987 = \boxed{} \rightarrow \boxed{\text{P}}$$

$$3076 + 4585 = \boxed{} \rightarrow \boxed{\text{J}}$$

$$3635 + 3124 = \boxed{} \rightarrow \boxed{\mathbf{W}}$$

$$3148 + 5901 = \boxed{} \rightarrow \boxed{\text{G}}$$

$$1722 + 1042 = \boxed{} \rightarrow \boxed{\mathbf{D}}$$

$$1209 + 2797 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$2976 + 2825 = \boxed{} \rightarrow \boxed{\text{Y}}$$

$$5147 + 3749 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$3925 + 3303 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$2738 + 6156 = \boxed{} \rightarrow \boxed{0}$$

$$2694 + 2550 = \boxed{} \rightarrow \boxed{\text{H}}$$

Scratch space:

CLUE 3
Multiplication facts (1-12)

We locate a grid of muddy footprints near the launch pad arranged in neat rows. Multiplying the rows by the columns gives us the code to unlock a witness report.

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

T							T												
6	20	55	9	8	55	16	6	21	4	70	72	55	28	8	42	55	48	3	
64	21	4	63	48	8	63	55												

$6 \times 1 = \square \rightarrow \text{[T]}$

$4 \times 2 = \square \rightarrow \text{[O]}$

$3 \times 1 = \square \rightarrow \text{[A]}$

$8 \times 9 = \square \rightarrow \text{[L]}$

$7 \times 10 = \square \rightarrow \text{[B]}$

$11 \times 5 = \square \rightarrow \text{[E]}$

$2 \times 8 = \square \rightarrow \text{[S]}$

$7 \times 4 = \square \rightarrow \text{[D]}$

$1 \times 9 = \square \rightarrow \text{[F]}$

$2 \times 2 = \square \rightarrow \text{[M]}$

$10 \times 2 = \square \rightarrow \text{[H]}$

$8 \times 8 = \square \rightarrow \text{[J]}$

$7 \times 3 = \square \rightarrow \text{[U]}$

$7 \times 9 = \square \rightarrow \text{[P]}$

$7 \times 6 = \square \rightarrow \text{[V]}$

$12 \times 4 = \square \rightarrow \text{[R]}$

Scratch space:

CLUE 4
Fractions of a number

A scrap of paper reveals that only a fraction of the rival blasters were active during the explosion. Calculating this fraction helps us eliminate several squads.

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

A		A						A							
35	15	35	25	4	36	10	32	35	2	27	2	6	27	27	34

			A				A							
17	7	6	35	34	29	14	35	17	10	4	36	34	29	

$5/8 \text{ of } 56 = \square \rightarrow \boxed{\text{A}}$

$5/10 \text{ of } 4 = \square \rightarrow \boxed{\text{G}}$

$2/4 \text{ of } 12 = \square \rightarrow \boxed{\text{R}}$

$1/2 \text{ of } 30 = \square \rightarrow \boxed{\text{C}}$

$5/10 \text{ of } 54 = \square \rightarrow \boxed{\text{E}}$

$4/8 \text{ of } 8 = \square \rightarrow \boxed{\text{O}}$

$2/6 \text{ of } 51 = \square \rightarrow \boxed{\text{S}}$

$2/3 \text{ of } 51 = \square \rightarrow \boxed{\text{N}}$

$1/4 \text{ of } 116 = \square \rightarrow \boxed{\text{D}}$

$2/4 \text{ of } 28 = \square \rightarrow \boxed{\text{W}}$

$5/10 \text{ of } 50 = \square \rightarrow \boxed{\text{M}}$

$9/10 \text{ of } 40 = \square \rightarrow \boxed{\text{U}}$

$1/2 \text{ of } 14 = \square \rightarrow \boxed{\text{T}}$

$1/3 \text{ of } 30 = \square \rightarrow \boxed{\text{F}}$

$1/2 \text{ of } 64 = \square \rightarrow \boxed{\text{L}}$

Scratch space:

CLUE 5**Fractions of a number - the last clue**

We inspect the spare dart canisters left in the grass. Finding the exact fraction of canisters that are empty points us directly to the saboteur.

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:

$3/6 \text{ of } 2 = \boxed{}$

$1/3 \text{ of } 15 = \boxed{}$

$1/3 \text{ of } 18 = \boxed{}$

$2/5 \text{ of } 5 = \boxed{}$

$3/6 \text{ of } 18 = \boxed{}$

$1/10 \text{ of } 110 = \boxed{}$

$1/4 \text{ of } 40 = \boxed{}$

$2/6 \text{ of } 21 = \boxed{}$

$3/5 \text{ of } 20 = \boxed{}$

$1/5 \text{ of } 15 = \boxed{}$

$4/6 \text{ of } 12 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain jammed a giant foam rocket in the chamber, then left a cardboard challenge note.
2. The villain overloaded the air pressure valve, then sprayed neon paint on the fortress wall.
3. The villain overloaded the air pressure valve, then dropped a trail of foam darts behind.
4. The villain rigged the trigger with a tight rubber band, then swiped the extra ammo crates.
5. The villain stuffed wet grass into the main barrel, then escaped through the loose fence board.
6. The villain cranked the spring mechanism too tight, then left a cardboard challenge note.
7. The villain stuffed wet grass into the main barrel, then sprayed neon paint on the fortress wall.
8. The villain overloaded the air pressure valve, then escaped through the loose fence board.
9. The villain cranked the spring mechanism too tight, then swiped the extra ammo crates.
10. The villain cranked the spring mechanism too tight, then sprayed neon paint on the fortress wall.
11. The villain cranked the spring mechanism too tight, then dropped a trail of foam darts behind.
12. The villain stuffed wet grass into the main barrel, then dropped a trail of foam darts behind.

Answer Key

The Mystery of the Exploded Nerf Launcher

Culprit: Jaxson Steele

Sniper Blaster · High Impact Rounds · Right Eye Aim · Camouflage Green Hair · Jump Rope Trip

Trail: Start 21 → Clue 1 17 → Clue 2 13 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Subtraction): "THE FOAM FIEND DOES NOT USE GLOW DARTS"

$5656 - 1007 = 4649$ (T) · $1729 - 596 = 1133$ (H) · $5833 - 3195 = 2638$ (G) · $7290 - 4416 = 2874$ (R) · $5426 - 3048 = 2378$ (A) · $13794 - 4908 = 8886$ (I) · $7058 - 1278 = 5780$ (M) · $5758 - 2114 = 3644$ (L) · $3991 - 2932 = 1059$ (D) · $4622 - 1539 = 3083$ (W) · $11158 - 4167 = 6991$ (F) · $7301 - 1772 = 5529$ (U) · $3935 - 2147 = 1788$ (N) · $5730 - 484 = 5246$ (S) · $5004 - 1865 = 3139$ (O) · $7038 - 1350 = 5688$ (E)

Clue 2 (Addition): "THE SCOPE WAS ADJUSTED FOR RIGHT EYE USE"

$4250 + 5213 = 9463$ (T) · $4506 + 2764 = 7270$ (E) · $1482 + 1157 = 2639$ (R) · $3036 + 3350 = 6386$ (C) · $2332 + 4006 = 6338$ (U) · $1340 + 873 = 2213$ (F) · $2951 + 5987 = 8938$ (P) · $3076 + 4585 = 7661$ (J) · $3635 + 3124 = 6759$ (W) · $3148 + 5901 = 9049$ (G) · $1722 + 1042 = 2764$ (D) · $1209 + 2797 = 4006$ (S) · $2976 + 2825 = 5801$ (Y) · $5147 + 3749 = 8896$ (A) · $3925 + 3303 = 7228$ (I) · $2738 + 6156 = 8894$ (O) · $2694 + 2550 = 5244$ (H)

Clue 3 (Multiplication facts (1-12)): "THE FOE STUMBLED OVER A JUMP ROPE"

$6 \times 1 = 6$ (T) · $4 \times 2 = 8$ (O) · $3 \times 1 = 3$ (A) · $8 \times 9 = 72$ (L) · $7 \times 10 = 70$ (B) · $11 \times 5 = 55$ (E) · $2 \times 8 = 16$ (S) · $7 \times 4 = 28$ (D) · $1 \times 9 = 9$ (F) · $2 \times 2 = 4$ (M) · $10 \times 2 = 20$ (H) · $8 \times 8 = 64$ (J) · $7 \times 3 = 21$ (U) · $7 \times 9 = 63$ (P) · $7 \times 6 = 42$ (V) · $12 \times 4 = 48$ (R)

Clue 4 (Fractions of a number): "A CAMOUFLAGE GREEN STRAND WAS FOUND"

$5/8$ of $56 = 35$ (A) · $5/10$ of $4 = 2$ (G) · $2/4$ of $12 = 6$ (R) · $1/2$ of $30 = 15$ (C) · $5/10$ of $54 = 27$ (E) · $4/8$ of $8 = 4$ (O) · $2/6$ of $51 = 17$ (S) · $2/3$ of $51 = 34$ (N) · $1/4$ of $116 = 29$ (D) · $2/4$ of $28 = 14$ (W) · $5/10$ of $50 = 25$ (M) · $9/10$ of $40 = 36$ (U) · $1/2$ of $14 = 7$ (T) · $1/3$ of $30 = 10$ (F) · $1/2$ of $64 = 32$ (L)

Clue 5 (Fractions of a number): surviving statement is box 4 → Jaxson Steele

$3/6$ of $2 = 1$ · $1/3$ of $15 = 5$ · $1/3$ of $18 = 6$ · $2/5$ of $5 = 2$ · $3/6$ of $18 = 9$ · $1/10$ of $110 = 11$ · $1/4$ of $40 = 10$ · $2/6$ of $21 = 7$ · $3/5$ of $20 = 12$ · $1/5$ of $15 = 3$ · $4/6$ of $12 = 8$