



The Cosmic Stream Sabotage

Grade 5 math · Fractions of a number, Multi-step word problems, Order of operations, Multiplication · Reading level grades 5-6

Detective: _____ Date: _____

A rogue streamer has hijacked the ultimate trivia stream at the Cosmos Academy Network! They locked the Master Broadcaster out of the control room and are deleting historical star maps and geography logs. We need to crack the math codes, track down this internet bandit, and save the channel's archives!

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 Rogue Streamer is _____

Possible suspects

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

NAME	TRIVIA ABILITY	IN-GAME BUFF	DEVICE STYLUS	HAIR EVIDENCE	FENDING TOOL
Ptolemy	History Hack	Anchor Drop	Red Stylus	Nebula Purple Strands	Gravity Trap
Shackleton	Supernova Strike	Anchor Drop	Red Stylus	Solar Orange Strands	Stardust Flash
Boudica	Blook Storm	Chronos Glitch	Blue Stylus	Cosmic Blue Strands	Stardust Flash
Lovelace	Blook Storm	Chronos Glitch	Blue Stylus	Solar Orange Strands	Stardust Flash
Earhart	Blook Storm	Anchor Drop	Blue Stylus	Solar Orange Strands	Stardust Flash
Magellan	History Hack	Nebula Boost	Blue Stylus	Cosmic Blue Strands	Gravity Trap
Hubble	Telescope Zoom	Anchor Drop	Blue Stylus	Solar Orange Strands	Stardust Flash
Copernicus	Supernova Strike	Nebula Boost	Blue Stylus	Solar Orange Strands	Trivia Shield
Kepler	Blook Storm	Orbit Shield	Blue Stylus	Nebula Purple Strands	Gravity Trap
Sagan	History Hack	Chronos Glitch	Red Stylus	Solar Orange Strands	Stardust Flash
Vespucci	Map Warp	Pixel Cloak	Red Stylus	Cosmic Blue Strands	Stardust Flash
Darwin	Blook Storm	Chronos Glitch	Red Stylus	Nebula Purple Strands	Gravity Trap
Herschel	Telescope Zoom	Anchor Drop	Blue Stylus	Solar Orange Strands	Trivia Shield
Aldrin	Map Warp	Nebula Boost	Blue Stylus	Solar Orange Strands	Trivia Shield
Newton	Map Warp	Nebula Boost	Blue Stylus	Solar Orange Strands	Stardust Flash
Galileo	Map Warp	Pixel Cloak	Blue Stylus	Solar Orange Strands	Stardust Flash
Sacagawea	Telescope Zoom	Chronos Glitch	Red Stylus	Solar Orange Strands	Trivia Shield
Zheng He	Supernova Strike	Anchor Drop	Blue Stylus	Nebula Purple Strands	Gravity Trap
Cleopatra	History Hack	Nebula Boost	Blue Stylus	Cosmic Blue Strands	Trivia Shield
Hawking	Blook Storm	Chronos Glitch	Red Stylus	Nebula Purple Strands	Trivia Shield
Marco Polo	Telescope Zoom	Nebula Boost	Blue Stylus	Cosmic Blue Strands	Stardust Flash

CLUE 1 Fractions of a number

We checked the main studio server logs. To decode the first clue, we have to calculate the total bandwidth used across three different live streams plus the bonus points gained from a geography quiz.

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

T																	T
29	36	26	4	39	33	33	25	39	7	18	16	26	17	7	16	29	

				T												
36	25	4	26	29	36	26	10	39	37	26	33	23	33	16	25	32

$3/6$ of 58 = → T	$2/10$ of 130 = → E	$2/6$ of 21 = → N
$2/8$ of 148 = → X	$1/4$ of 40 = → P	$4/8$ of 32 = → O
$2/10$ of 115 = → C	$1/3$ of 96 = → K	$8/10$ of 5 = → V
$3/6$ of 66 = → L	$2/5$ of 45 = → D	$3/4$ of 48 = → H
$2/8$ of 68 = → S	$1/6$ of 150 = → A	$4/8$ of 78 = → I

Scratch space:

CLUE 2 Multi-step word problems

The suspect ran past the solar system display and knocked down some model planets. Only a small fraction of the planets survived the fall, but that fraction holds the key to the next lead.

Solve each problem, then write its letter in the boxes to fill in the missing word.

A witness saw the villain was B

74 86 32 52 76 8 58 86 32 76

The Lead Investigator collected 145 trivia tokens in the morning and 3 trivia tokens in the afternoon, then split them equally among 2 The Astronomy Club. How many trivia tokens did each get?

Answer: → **B**

The Lead Investigator earned 5 model rockets in each of 6 rounds, plus 59 bonus model rockets. Then 13 model rockets were lost. How many model rockets are left?

Answer: → **S**

The Lead Investigator filled 5 boxes with 7 model rockets each, then found 23 more model rockets. How many model rockets are there in all?

Answer: → **Y**

The Lead Investigator earned 5 globes in each of 2 rounds, plus 23 bonus globes. Then 1 globes were lost. How many globes are left?

Answer: → **U**

There were 236 globes in all. 28 globes were set aside. The rest were shared equally among 4 The Astronomy Club. How many globes did each get?

Answer: → **E**

The Lead Investigator earned 2 globes in each of 5 rounds, plus 81 bonus globes. Then 5 globes were lost. How many globes are left?

Answer: → **L**

There were 73 trivia tokens in all. 9 trivia tokens were set aside. The rest were shared equally among 8 The Astronomy Club. How many trivia tokens did each get?

Answer: → **T**

Scratch space:

Order of operations

To bypass the locked Blooket database, we must solve a security code. The system requires us to follow strict rules, multiplying before adding, to unlock the hair sample file.

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

A number line from 0 to 100 with two rows of boxes. The first row has boxes at 25, 19, 6, 16, 26, 57, 37, 13, 30, 19, 6, 63, 46, 25, and 46. The second row has boxes at 56, 25, 46, 64, 63, 36, 56, 25, 26, 57, 46, 56, and 19. The boxes at 25 in the first row and 25 in the second row are highlighted in orange and labeled with a 'T'.

$$9 \times 4 - 11 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$6 \times 8 - 12 = \boxed{} \rightarrow \boxed{\text{U}}$$

$$6 \times 12 - 15 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$58 + 2 \times 3 = \boxed{} \rightarrow \boxed{\text{R}}$$

$14 + 6 \times 7 = \boxed{} \rightarrow \boxed{\text{S}}$

$13 + 2 \times 3 = \boxed{} \rightarrow \boxed{\text{H}}$

$$6 \times 4 - 8 = \boxed{} \rightarrow \boxed{\mathbf{Y}}$$

$$20 + 3 \times 2 = \boxed{} \rightarrow \mathbf{F}$$

$$12 + 3 \times 6 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$11 \times 6 - 3 = \boxed{} \rightarrow \boxed{\mathbf{D}}$$

$$1 + 9 \times 4 = \boxed{} \rightarrow \boxed{} \mid$$

$$2 + 2 \times 2 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$6 \times 11 - 20 = \boxed{} \rightarrow \boxed{\mathbf{A}}$$

$$7 + 2 \times 3 = \boxed{} \rightarrow \boxed{\text{N}}$$

Scratch space:

CLUE 4
Multiplication facts (1-12)

We found rows of storage lockers holding old maps and star charts. Counting the total number of items grid-by-grid reveals the suspect's main weakness.

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

W																	
54	1	44	42	27	49	20	108	42	48	60	4	42	4	60	49	35	1

108	16	4	60	49	20	108

$9 \times 6 = \square \rightarrow$ W	$11 \times 4 = \square \rightarrow$ F	$3 \times 9 = \square \rightarrow$ U	$8 \times 2 = \square \rightarrow$ T
$9 \times 12 = \square \rightarrow$ S	$4 \times 5 = \square \rightarrow$ D	$7 \times 6 = \square \rightarrow$ O	
$4 \times 12 = \square \rightarrow$ L	$1 \times 1 = \square \rightarrow$ E	$7 \times 5 = \square \rightarrow$ G	
$6 \times 10 = \square \rightarrow$ A	$7 \times 7 = \square \rightarrow$ N	$1 \times 4 = \square \rightarrow$ R	

Scratch space:

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

The stream chat contains thousands of coordinates. Only a fraction of these coordinates are real historical locations on Earth, pointing us directly to the suspect's hand tool.

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:

$2/8 \text{ of } 48 = \boxed{}$

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

$2/6 \text{ of } 33 = \boxed{}$

$1/10 \text{ of } 100 = \boxed{}$

$3/4 \text{ of } 12 = \boxed{}$

$1/4 \text{ of } 32 = \boxed{}$

$1/5 \text{ of } 20 = \boxed{}$

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

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

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

$3/10 \text{ of } 10 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain hijacked the telescope video feed, then unsubscribed all academy members.
2. The villain hacked the geography leaderboards, then deleted the star constellation logs.
3. The villain hijacked the telescope video feed, then swapped the telescope coordinates.
4. The villain overloaded the server with space trivia, then unsubscribed all academy members.
5. The villain overloaded the server with space trivia, then swapped the telescope coordinates.
6. The villain flooded the chat with cosmic emojis, then scrambled the map of ancient rome.
7. The villain hijacked the telescope video feed, then stole the golden astro blook.
8. The villain locked the historic timeline database, then stole the golden astro blook.
9. The villain locked the historic timeline database, then scrambled the map of ancient rome.
10. The villain overloaded the server with space trivia, then deleted the star constellation logs.
11. The villain flooded the chat with cosmic emojis, then swapped the telescope coordinates.
12. The villain locked the historic timeline database, then swapped the telescope coordinates.

Answer Key

The Cosmic Stream Sabotage

Culprit: Lovelace

Blook Storm · Chronos Glitch · Blue Stylus · Solar Orange Strands · Stardust Flash

Trail: Start 21 → Clue 1 19 → Clue 2 13 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE VILLAIN DOES NOT HAVE THE PIXEL CLOAK"

$3/6$ of 58 = 29 (T) · $2/10$ of 130 = 26 (E) · $2/6$ of 21 = 7 (N) · $2/8$ of 148 = 37 (X) · $1/4$ of 40 = 10 (P) · $4/8$ of 32 = 16 (O) · $2/10$ of 115 = 23 (C) · $1/3$ of 96 = 32 (K) · $8/10$ of 5 = 4 (V) · $3/6$ of 66 = 33 (L) · $2/5$ of 45 = 18 (D) · $3/4$ of 48 = 36 (H) · $2/8$ of 68 = 17 (S) · $1/6$ of 150 = 25 (A) · $4/8$ of 78 = 39 (I)

Clue 2 (Multi-step word problems): "BLUE STYLUS"

The Lead Investigator collected 145 trivia tokens in the morning and 3 trivia tokens in the afternoon, then split them equally among 2 The Astronomy Club. How many trivia tokens did each get? = 74 (B) · The Lead Investigator earned 5 model rockets in each of 6 rounds, plus 59 bonus model rockets. Then 13 model rockets were lost. How many model rockets are left? = 76 (S) · The Lead Investigator filled 5 boxes with 7 model rockets each, then found 23 more model rockets. How many model rockets are there in all? = 58 (Y) · The Lead Investigator earned 5 globes in each of 2 rounds, plus 23 bonus globes. Then 1 globe was lost. How many globes are left? = 32 (U) · There were 236 globes in all. 28 globes were set aside. The rest were shared equally among 4 The Astronomy Club. How many globes did each get? = 52 (E) · The Lead Investigator earned 2 globes in each of 5 rounds, plus 81 bonus globes. Then 5 globes were lost. How many globes are left? = 86 (L) · There were 73 trivia tokens in all. 9 trivia tokens were set aside. The rest were shared equally among 8 The Astronomy Club. How many trivia tokens did each get? = 8 (T)

Clue 3 (Order of operations): "THEY FLINCHED AT A STARDUST FLASH"

$9 \times 4 - 11 = 25$ (T) · $6 \times 8 - 12 = 36$ (U) · $6 \times 12 - 15 = 57$ (L) · $58 + 2 \times 3 = 64$ (R) · $14 + 6 \times 7 = 56$ (S) · $13 + 2 \times 3 = 19$ (H) · $6 \times 4 - 8 = 16$ (Y) · $20 + 3 \times 2 = 26$ (F) · $12 + 3 \times 6 = 30$ (C) · $11 \times 6 - 3 = 63$ (D) · $1 + 9 \times 4 = 37$ (I) · $2 + 2 \times 2 = 6$ (E) · $6 \times 11 - 20 = 46$ (A) · $7 + 2 \times 3 = 13$ (N)

Clue 4 (Multiplication facts (1-12)): "WE FOUND SOLAR ORANGE STRANDS"

$9 \times 6 = 54$ (W) · $11 \times 4 = 44$ (F) · $3 \times 9 = 27$ (U) · $8 \times 2 = 16$ (T) · $9 \times 12 = 108$ (S) · $4 \times 5 = 20$ (D) · $7 \times 6 = 42$ (O) · $4 \times 12 = 48$ (L) · $1 \times 1 = 1$ (E) · $7 \times 5 = 35$ (G) · $6 \times 10 = 60$ (A) · $7 \times 7 = 49$ (N) · $1 \times 4 = 4$ (R)

Clue 5 (Fractions of a number): surviving statement is box 6 → Lovelace

$2/8$ of 48 = 12 · $1/3$ of 3 = 1 · $2/6$ of 33 = 11 · $1/10$ of 100 = 10 · $3/4$ of 12 = 9 · $1/4$ of 32 = 8 · $1/5$ of 20 = 4 · $4/10$ of 5 = 2 · $1/3$ of 15 = 5 · $2/6$ of 21 = 7 · $3/10$ of 10 = 3