

The Case of the Ruined Redstone Temple

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

Detective: _____ Date: _____

Verity needs your help! A rogue crafter has broken into the ancient temple archives and stolen the sacred Nether Star Map. We must track down the culprit before they grief the entire server.

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 grieving phantom is _____

Possible suspects

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

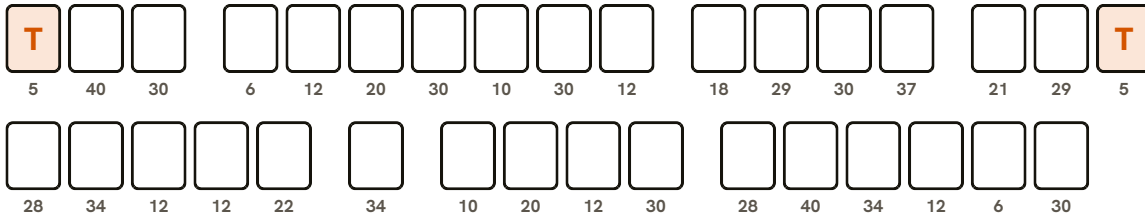
NAME	PRIMARY BLOCK CHOICE	POCKET INVENTORY TOOL	HOLDING STANCE	HELMET STYLE	VULNERABILITY
Harper	Prismarine Bricks	Fire Charge	Left Handed Grip	Gold Helmet	Splash Potion of Slowness
Max	Redstone Repeaters	Golden Apple	Left Handed Grip	Iron Helmet	Splash Potion of Slowness
Jack	Redstone Repeaters	Water Bucket	Left Handed Grip	Netherite Helmet	Splash Potion of Slowness
Jesse	Obsidian Blocks	Golden Apple	Left Handed Grip	Gold Helmet	Lava Trench Trap
Olivia	Glowstone Blocks	Water Bucket	Right Handed Grip	Gold Helmet	Sweet Berry Bush
Fred	Glowstone Blocks	Diamond Pickaxe	Left Handed Grip	Iron Helmet	Splash Potion of Slowness
Nurm	Obsidian Blocks	Ender Pearl	Left Handed Grip	Gold Helmet	Lava Trench Trap
Emily	Slime Blocks	Ender Pearl	Left Handed Grip	Gold Helmet	Splash Potion of Slowness
Binta	Prismarine Bricks	Ender Pearl	Left Handed Grip	Gold Helmet	Splash Potion of Slowness
Stella	Obsidian Blocks	Ender Pearl	Right Handed Grip	Gold Helmet	Splash Potion of Slowness
Val	Prismarine Bricks	Water Bucket	Left Handed Grip	Gold Helmet	Sweet Berry Bush
Soren	Redstone Repeaters	Diamond Pickaxe	Right Handed Grip	Iron Helmet	Sweet Berry Bush
Lukas	Obsidian Blocks	Ender Pearl	Left Handed Grip	Netherite Helmet	Splash Potion of Slowness
Ivor	Slime Blocks	Ender Pearl	Left Handed Grip	Iron Helmet	Lava Trench Trap
Xara	Prismarine Bricks	Golden Apple	Right Handed Grip	Netherite Helmet	Splash Potion of Slowness
Nell	Redstone Repeaters	Ender Pearl	Right Handed Grip	Netherite Helmet	Sweet Berry Bush
Romeo	Prismarine Bricks	Diamond Pickaxe	Left Handed Grip	Gold Helmet	Splash Potion of Slowness
Leo	Redstone Repeaters	Golden Apple	Left Handed Grip	Gold Helmet	Lava Trench Trap
Radar	Redstone Repeaters	Golden Apple	Right Handed Grip	Netherite Helmet	Sweet Berry Bush
Steve	Prismarine Bricks	Water Bucket	Left Handed Grip	Gold Helmet	Splash Potion of Slowness
Petra	Slime Blocks	Water Bucket	Left Handed Grip	Netherite Helmet	Splash Potion of Slowness

CLUE 1

Fractions of a number

Verity stacks rows of cobblestone blocks to compare two minecart storage chests. She draws a visual bar model in the dirt to see which chest holds more coal.

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



$$1/2 \text{ of } 10 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$4/8 \text{ of } 56 = \boxed{} \rightarrow \boxed{\text{C}}$$

$$2/6 \text{ of } 120 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$5/10 \text{ of } 58 = \boxed{} \rightarrow \boxed{\text{O}}$$

$$1/6 \text{ of } 180 = \boxed{} \rightarrow \boxed{\text{E}}$$

$$1/5 \text{ of } 185 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$6/10 \text{ of } 10 = \boxed{} \rightarrow \boxed{\text{G}}$$

$$3/6 \text{ of } 24 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$4/8 \text{ of } 42 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$1/4 \text{ of } 136 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$2/5 \text{ of } 25 = \boxed{} \rightarrow \boxed{\text{F}}$$

$$4/10 \text{ of } 50 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$1/2 \text{ of } 36 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$2/3 \text{ of } 33 = \boxed{} \rightarrow \boxed{\text{Y}}$$

Scratch space:

CLUE 2

Multi-step word problems

To unlock a sealed iron door, Verity must calculate the exact number of iron ingots and wood planks needed to craft several pistons and tripwire hooks.

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

A witness saw the villain was L D D G R I P .

86 17 56 89 16 49 51 17

There were 580 slimeballs in all. 4 the build team used 16 slimeballs each. The other 6 the build team shared the rest equally. How many slimeballs did each of the other the build team get?

Answer: → L

There were 325 redstone torches in all. 3 the build team used 15 redstone torches each. The other 5 the build team shared the rest equally. How many redstone torches did each of the other the build team get?

Answer: → F

There were 387 golden carrots in all. 4 the build team used 33 golden carrots each. The other 5 the build team shared the rest equally. How many golden carrots did each of the other the build team get?

Answer: → N

There were 192 slimeballs in all. 2 the build team used 7 slimeballs each. The other 2 the build team shared the rest equally. How many slimeballs did each of the other the build team get?

Answer: → T

There were 76 diamond ores in all. 1 the build team used 8 diamond ores each. The other 4 the build team shared the rest equally. How many diamond ores did each of the other the build team get?

Answer: → E

The wandering trader collected 81 ender pearls in the morning and 213 ender pearls in the afternoon, then split them equally among 6 the build team. How many ender pearls did each get?

Answer: → A

There were 113 diamond ores in all. 17 diamond ores were set aside. The rest were shared equally among 6 the build team. How many diamond ores did each get?

Answer: → H

Scratch space:

CLUE 3
Bar model word problems

Verity finds a shared chest of emeralds left behind by wandering traders. She divides the total stack to find the exact fraction of gems owned by each trader.

Draw a bar model to solve each word problem, then write its letter in the boxes to fill in the missing word.

Someone scared the villain off with



The wandering trader has 225 ender pearls, packed 3 to a bag. How many bags can be filled?

draw a bar model

Answer: → **S**

One group collected 13 slimeballs and another group collected 29 slimeballs. How many slimeballs in all?

draw a bar model

Answer: → **A**

The wandering trader used $\frac{1}{2}$ of the golden carrots on the first day. The other 60 golden carrots were used the next day. How many golden carrots were there in all?

draw a bar model

Answer: → **L**

The wandering trader used $\frac{1}{5}$ of the slimeballs on the first day. The other 92 slimeballs were used the next day. How many slimeballs were there in all?

draw a bar model

Answer: → **T**

The wandering trader has 58 diamond ores, packed 2 to a bag. How many bags can be filled?

draw a bar model

Answer: → **H**

The wandering trader used $\frac{1}{2}$ of the golden carrots on the first day. The other 62 golden carrots were used the next day. How many golden carrots were there in all?

draw a bar model

Answer: → **P**

One group collected 113 slimeballs and another group collected 24 slimeballs. How many slimeballs in all?

draw a bar model

Answer: → **O**

CLUE 4 Order of operations

A complex redstone circuit sits before Verity. She must activate the repeaters and levers in the correct order of operations to avoid setting off a TNT trap.

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

A																		A	
63	17	78	49	70	28	23	73	58	14	70	25	23	23	31	21	40	63	17	
58	31	6	21	49	70	21	78	31	14	49	29	21							

$9 + 6 \times 9 = \square \rightarrow \mathbf{A}$	$2 \times 10 - 3 = \square \rightarrow \mathbf{S}$	$10 + 3 \times 5 = \square \rightarrow \mathbf{U}$
$8 + 3 \times 2 = \square \rightarrow \mathbf{D}$	$2 + 2 \times 2 = \square \rightarrow \mathbf{F}$	$5 \times 9 - 5 = \square \rightarrow \mathbf{W}$
$5 \times 7 - 6 = \square \rightarrow \mathbf{R}$	$6 \times 5 - 2 = \square \rightarrow \mathbf{Y}$	$42 + 4 \times 9 = \square \rightarrow \mathbf{H}$
$11 + 2 \times 5 = \square \rightarrow \mathbf{T}$	$9 \times 9 - 11 = \square \rightarrow \mathbf{N}$	$28 + 9 \times 5 = \square \rightarrow \mathbf{O}$
$10 \times 5 - 1 = \square \rightarrow \mathbf{I}$	$33 + 5 \times 5 = \square \rightarrow \mathbf{L}$	$4 \times 11 - 13 = \square \rightarrow \mathbf{E}$
$5 \times 10 - 27 = \square \rightarrow \mathbf{G}$		

Scratch space:

CLUE 5 Missing addends - the last clue

A double chest needs to be completely filled with stone blocks to trigger a heavy pressure plate. Verity calculates how many more blocks are missing from the stack.

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:

$7 + \underline{\quad} = 14$

$5 + \underline{\quad} = 14$

$3 + \underline{\quad} = 7$

$18 + \underline{\quad} = 23$

$20 + \underline{\quad} = 21$

$37 + \underline{\quad} = 47$

$11 + \underline{\quad} = 13$

$23 + \underline{\quad} = 35$

$2 + \underline{\quad} = 13$

$15 + \underline{\quad} = 18$

$29 + \underline{\quad} = 37$

Step 2 - cross out the sentence with each answer:

1. The villain lays down a complex redstone trail, then tunnels away using a diamond pickaxe.
2. The villain builds a towering wall of obsidian, then sparks a blazing distraction with a fire charge.
3. The villain lights up the dark cavern with glowstone, then sparks a blazing distraction with a fire charge.
4. The villain stacks heavy prismarine bricks, then tunnels away using a diamond pickaxe.
5. The villain bounces high into the air on slime blocks, then heals up quickly by eating a golden apple.
6. The villain bounces high into the air on slime blocks, then teleports through the wall with an ender pearl.
7. The villain stacks heavy prismarine bricks, then places a water bucket to stop the fall.
8. The villain builds a towering wall of obsidian, then tunnels away using a diamond pickaxe.
9. The villain stacks heavy prismarine bricks, then teleports through the wall with an ender pearl.
10. The villain builds a towering wall of obsidian, then heals up quickly by eating a golden apple.
11. The villain lights up the dark cavern with glowstone, then tunnels away using a diamond pickaxe.
12. The villain bounces high into the air on slime blocks, then tunnels away using a diamond pickaxe.

Answer Key

The Case of the Ruined Redstone Temple

Culprit: Emily

Slime Blocks · Ender Pearl · Left Handed Grip · Gold Helmet · Splash Potion of Slowness

Trail: Start 21 → Clue 1 20 → Clue 2 14 → Clue 3 9 → Clue 4 4 → Clue 5 1

Clue 1 (Fractions of a number): "THE GRIEFER DOES NOT CARRY A FIRE CHARGE"

$\frac{1}{2}$ of 10 = 5 (T) · $\frac{4}{8}$ of 56 = 28 (C) · $\frac{2}{6}$ of 120 = 40 (H) · $\frac{5}{10}$ of 58 = 29 (O) · $\frac{1}{6}$ of 180 = 30 (E) · $\frac{1}{5}$ of 185 = 37 (S) · $\frac{6}{10}$ of 10 = 6 (G) · $\frac{3}{6}$ of 24 = 12 (R) · $\frac{4}{8}$ of 42 = 21 (N) · $\frac{1}{4}$ of 136 = 34 (A) · $\frac{2}{5}$ of 25 = 10 (F) · $\frac{4}{10}$ of 50 = 20 (I) · $\frac{1}{2}$ of 36 = 18 (D) · $\frac{2}{3}$ of 33 = 22 (Y)

Clue 2 (Multi-step word problems): "LEFT HANDED GRIP"

There were 580 slimeballs in all. 4 the build team used 16 slimeballs each. The other 6 the build team shared the rest equally. How many slimeballs did each of the other the build team get? = 86 (L) · There were 325 redstone torches in all. 3 the build team used 15 redstone torches each. The other 5 the build team shared the rest equally. How many redstone torches did each of the other the build team get? = 56 (F) · There were 387 golden carrots in all. 4 the build team used 33 golden carrots each. The other 5 the build team shared the rest equally. How many golden carrots did each of the other the build team get? = 51 (N) · There were 192 slimeballs in all. 2 the build team used 7 slimeballs each. The other 2 the build team shared the rest equally. How many slimeballs did each of the other the build team get? = 89 (T) · There were 76 diamond ores in all. 1 the build team used 8 diamond ores each. The other 4 the build team shared the rest equally. How many diamond ores did each of the other the build team get? = 17 (E) · The wandering trader collected 81 ender pearls in the morning and 213 ender pearls in the afternoon, then split them equally among 6 the build team. How many ender pearls did each get? = 49 (A) · There were 113 diamond ores in all. 17 diamond ores were set aside. The rest were shared equally among 6 the build team. How many diamond ores did each get? = 16 (H)

Clue 3 (Bar model word problems): "SPLASH POTION OF SLOWNESS"

The wandering trader has 225 ender pearls, packed 3 to a bag. How many bags can be filled? = 75 (S) · One group collected 13 slimeballs and another group collected 29 slimeballs. How many slimeballs in all? = 42 (A) · The wandering trader used $\frac{1}{2}$ of the golden carrots on the first day. The other 60 golden carrots were used the next day. How many golden carrots were there in all? = 120 (L) · The wandering trader used $\frac{1}{5}$ of the slimeballs on the first day. The other 92 slimeballs were used the next day. How many slimeballs were there in all? = 115 (T) · The wandering trader has 58 diamond ores, packed 2 to a bag. How many bags can be filled? = 29 (H) · The wandering trader used $\frac{1}{2}$ of the golden carrots on the first day. The other 62 golden carrots were used the next day. How many golden carrots were there in all? = 124 (P) · One group collected 113 slimeballs and another group collected 24 slimeballs. How many slimeballs in all? = 137 (O)

Clue 4 (Order of operations): "A SHINY GOLD NUGGET WAS LEFT IN THE DIRT"

$9 + 6 \times 9 = 63$ (A) · $2 \times 10 - 3 = 17$ (S) · $10 + 3 \times 5 = 25$ (U) · $8 + 3 \times 2 = 14$ (D) · $2 + 2 \times 2 = 6$ (F) · $5 \times 9 - 5 = 40$ (W) · $5 \times 7 - 6 = 29$ (R) · $6 \times 5 - 2 = 28$ (Y) · $42 + 4 \times 9 = 78$ (H) · $11 + 2 \times 5 = 21$ (T) · $9 \times 9 - 11 = 70$ (N) · $28 + 9 \times 5 = 73$ (O) · $10 \times 5 - 1 = 49$ (I) · $33 + 5 \times 5 = 58$ (L) · $4 \times 11 - 13 = 31$ (E) · $5 \times 10 - 27 = 23$ (G)

Clue 5 (Missing addends): surviving statement is box 6 → Emily

$7 + \underline{\quad} = 14 = 7$ · $5 + \underline{\quad} = 14 = 9$ · $3 + \underline{\quad} = 7 = 4$ · $18 + \underline{\quad} = 23 = 5$ · $20 + \underline{\quad} = 21 = 1$ · $37 + \underline{\quad} = 47 = 10$ · $11 + \underline{\quad} = 13 = 2$ · $23 + \underline{\quad} = 35 = 12$ · $2 + \underline{\quad} = 13 = 11$ · $15 + \underline{\quad} = 18 = 3$ · $29 + \underline{\quad} = 37 = 8$