



The Potion Dungeon Mix-Up

Grade 3 math · Addition, Subtraction, Place value, Multi-step word problems, Division · Reading level grades 3-4

Detective: _____ Date: _____

Someone has snuck into the potion dungeons and mixed up all the sleeping draughts with giggling juice! The potions master is stuck laughing. We must find the rogue wizard who did this!

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 wizard is _____

Possible suspects

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

NAME	FAVORITE SPELL	MAGICAL PET	WAND HAND	HAIR COLOR	COUNTER-SPELL
Lavender Brown	Levitation Charm	Baby Dragon	Right-Handed	Jet Black	Lumos Charm
Parvati Patil	Levitation Charm	Black Cat	Right-Handed	Jet Black	Lumos Charm
Oliver Wood	Levitation Charm	Baby Dragon	Left-Handed	Sandy Blond	Riddikulus Charm
Susan Bones	Shield Charm	Screech Owl	Right-Handed	Sandy Blond	Riddikulus Charm
Gregory Goyle	Levitation Charm	Black Cat	Left-Handed	Sandy Blond	Expelliarmus Spell
George Weasley	Freezing Spell	Black Cat	Left-Handed	Sandy Blond	Lumos Charm
Padma Patil	Fire-Making Spell	Screech Owl	Left-Handed	Sandy Blond	Lumos Charm
Harry Potter	Freezing Spell	Barn Owl	Left-Handed	Jet Black	Riddikulus Charm
Hannah Abbott	Fire-Making Spell	Green Toad	Right-Handed	Sandy Blond	Riddikulus Charm
Cho Chang	Shield Charm	Green Toad	Left-Handed	Jet Black	Expelliarmus Spell
Draco Malfoy	Shield Charm	Barn Owl	Left-Handed	Sandy Blond	Riddikulus Charm
Vincent Crabbe	Vanishing Hex	Barn Owl	Left-Handed	Sandy Blond	Riddikulus Charm
Seamus Finnigan	Freezing Spell	Screech Owl	Left-Handed	Sandy Blond	Riddikulus Charm
Percy Weasley	Freezing Spell	Black Cat	Right-Handed	Jet Black	Riddikulus Charm
Cedric Diggory	Shield Charm	Green Toad	Left-Handed	Fiery Red	Expelliarmus Spell
Hermione Granger	Levitation Charm	Green Toad	Left-Handed	Sandy Blond	Expelliarmus Spell
Fred Weasley	Shield Charm	Screech Owl	Left-Handed	Sandy Blond	Riddikulus Charm
Ginny Weasley	Vanishing Hex	Barn Owl	Right-Handed	Fiery Red	Riddikulus Charm
Pansy Parkinson	Vanishing Hex	Black Cat	Left-Handed	Fiery Red	Lumos Charm
Colin Creevey	Shield Charm	Barn Owl	Right-Handed	Jet Black	Riddikulus Charm
Luna Lovegood	Levitation Charm	Screech Owl	Left-Handed	Fiery Red	Lumos Charm

CLUE 1 Addition

The Herbology teacher needs to count the Mandrake pots. Let us add the greenhouse tallies to find the first clue!

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

T																T
748	974	406	884	882	925	925	286	882	234	752	343	406	539	234	343	748

974	286	884	406	286	796	286	796	556	752	392	286	744	343	234		

$$243 + 505 = \boxed{} \rightarrow \boxed{\text{T}}$$

$$514 + 238 = \boxed{} \rightarrow \boxed{\text{D}}$$

$$280 + 645 = \boxed{} \rightarrow \boxed{\text{L}}$$

$$310 + 572 = \boxed{} \rightarrow \boxed{\text{I}}$$

$$357 + 527 = \boxed{} \rightarrow \boxed{\text{V}}$$

$$254 + 285 = \boxed{} \rightarrow \boxed{\text{S}}$$

$$255 + 489 = \boxed{} \rightarrow \boxed{\text{G}}$$

$$182 + 374 = \boxed{} \rightarrow \boxed{\text{Y}}$$

$$134 + 209 = \boxed{} \rightarrow \boxed{\text{O}}$$

$$151 + 241 = \boxed{} \rightarrow \boxed{\text{R}}$$

$$504 + 292 = \boxed{} \rightarrow \boxed{\text{B}}$$

$$78 + 156 = \boxed{} \rightarrow \boxed{\text{N}}$$

$$585 + 389 = \boxed{} \rightarrow \boxed{\text{H}}$$

$$92 + 194 = \boxed{} \rightarrow \boxed{\text{A}}$$

$$156 + 250 = \boxed{} \rightarrow \boxed{\text{E}}$$

Scratch space:

CLUE 2

We bought potion vials at Diagon Alley but dropped some on the cobblestones. Subtract the broken ones to get our second clue!

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

222 569 275 145 473 275 185 185 735 485 145 845 485 145 222 735 298 222 569

485 185 275 857 222 569 485 161 218

340 - 118 = →

$730 - 161 = \square \rightarrow \boxed{\text{H}}$

$193 - 8 = \square \rightarrow \boxed{\text{L}}$

907 - 172 = → **W**

$173 - 12 = \boxed{} \rightarrow \boxed{\text{N}}$

$662 - 177 = \square \rightarrow \boxed{\mathbf{A}}$

$661 - 188 = \square \rightarrow \boxed{\text{P}}$

$335 - 60 = \boxed{} \rightarrow \boxed{\text{E}}$

$978 - 121 = \boxed{} \rightarrow \boxed{\text{F}}$

643 - 345 = →

247 - 102 = → **S**

$$881 - 36 = \boxed{} \rightarrow \boxed{\text{C}}$$

$527 - 309 = \boxed{} \rightarrow \boxed{\text{D}}$

Scratch space:

CLUE 3 Place value

The magical lock on the restricted section has a three digit code. Look closely at the place values of the numbers to unlock the third clue!

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

T																	
50	20	2000	400	1000	600	600	80	1000	40	300	20	200	1000	40	60	300	
										T							
90	200	5000	10	80	600	80	4000	6000	20	50	2000	200	8000	20	80	200	10

What is the value of the 5 in 8,756? → **T**

What is the value of the 4 in 347? → **N**

What is the value of the 8 in 8,320? → **C**

What is the value of the 3 in 387? → **S**

What is the value of the 1 in 1,063? → **I**

What is the value of the 1 in 8,518? → **M**

What is the value of the 8 in 789? → **A**

What is the value of the 9 in 8,794? → **F**

What is the value of the 6 in 6,348? → **G**

What is the value of the 2 in 8,238? → **R**

What is the value of the 4 in 84,826? → **U**

What is the value of the 5 in 5,380? → **O**

What is the value of the 2 in 92,371? → **E**

What is the value of the 4 in 2,400? → **V**

What is the value of the 2 in 5,025? → **H**

What is the value of the 6 in 678? → **L**

What is the value of the 6 in 8,062? → **K**

Scratch space:

CLUE 4

Multi-step word problems

The students are packing broomsticks into crates. They load several boxes then unpack a few broken ones. Work through these steps for the fourth clue!

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

A strand of S O hair turned up at the scene.

9 16 17 36 8 33 40 17 36

There were 79 spellbooks in all. 2 Gryffindor House used 26 spellbooks each. The other 3 Gryffindor House shared the rest equally. How many spellbooks did each of the other Gryffindor House get?

Answer: → S

Prefect earned 5 spellbooks in each of 2 rounds, plus 33 bonus spellbooks. Then 7 spellbooks were lost. How many spellbooks are left?

Answer: → D

Prefect earned 8 chocolate frogs in each of 2 rounds, plus 6 bonus chocolate frogs. Then 14 chocolate frogs were lost. How many chocolate frogs are left?

Answer: → Y

Prefect collected 64 crystal vials in the morning and 32 crystal vials in the afternoon, then split them equally among 6 Gryffindor House. How many crystal vials did each get?

Answer: → A

There were 90 crystal vials in all. 2 Gryffindor House used 11 crystal vials each. The other 4 Gryffindor House shared the rest equally. How many crystal vials did each of the other Gryffindor House get?

Answer: → N

There were 388 crystal vials in all. 4 Gryffindor House used 37 crystal vials each. The other 6 Gryffindor House shared the rest equally. How many crystal vials did each of the other Gryffindor House get?

Answer: → L

Prefect earned 2 chocolate frogs in each of 3 rounds, plus 42 bonus chocolate frogs. Then 15 chocolate frogs were lost. How many chocolate frogs are left?

Answer: → B

Scratch space:

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

We must share a batch of Bertie Botts Every Flavor Beans equally among the houses. Divide them up to reveal 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:

$30 \div 6 = \boxed{}$

$36 \div 6 = \boxed{}$

$8 \div 4 = \boxed{}$

$84 \div 7 = \boxed{}$

$40 \div 4 = \boxed{}$

$44 \div 4 = \boxed{}$

$24 \div 3 = \boxed{}$

$15 \div 5 = \boxed{}$

$24 \div 6 = \boxed{}$

$49 \div 7 = \boxed{}$

$45 \div 5 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain used a freezing spell to chill the potion, then flew out the window with a screech owl.
2. The villain whispered a vanishing hex to hide the keys, then fled into the night with a screeching barn owl.
3. The villain whispered a vanishing hex to hide the keys, then flew out the window with a screech owl.
4. The villain shot a fire-making spell at the logs, then sneaked away while holding a baby dragon.
5. The villain raised a shield charm to block the door, then fled into the night with a screeching barn owl.
6. The villain raised a shield charm to block the door, then flew out the window with a screech owl.
7. The villain raised a shield charm to block the door, then sent a sneaky black cat to steal the recipe.
8. The villain shot a fire-making spell at the logs, then leapt over the desk with a green toad.
9. The villain cast a levitation charm to float the cauldron, then sneaked away while holding a baby dragon.
10. The villain used a freezing spell to chill the potion, then sneaked away while holding a baby dragon.
11. The villain whispered a vanishing hex to hide the keys, then sneaked away while holding a baby dragon.
12. The villain cast a levitation charm to float the cauldron, then sent a sneaky black cat to steal the recipe.

Answer Key

The Potion Dungeon Mix-Up

Culprit: Seamus Finnigan

Freezing Spell · Screech Owl · Left-Handed · Sandy Blond · Riddikulus Charm

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

Clue 1 (Addition): "THE VILLAIN DOES NOT HAVE A BABY DRAGON"

$243 + 505 = 748$ (T) · $514 + 238 = 752$ (D) · $280 + 645 = 925$ (L) · $310 + 572 = 882$ (I) · $357 + 527 = 884$ (V) · $254 + 285 = 539$ (S) · $255 + 489 = 744$ (G) · $182 + 374 = 556$ (Y) · $134 + 209 = 343$ (O) · $151 + 241 = 392$ (R) · $504 + 292 = 796$ (B) · $78 + 156 = 234$ (N) · $585 + 389 = 974$ (H) · $92 + 194 = 286$ (A) · $156 + 250 = 406$ (E)

Clue 2 (Subtraction): "THE SPELL WAS CAST WITH A LEFT HAND"

$340 - 118 = 222$ (T) · $730 - 161 = 569$ (H) · $193 - 8 = 185$ (L) · $907 - 172 = 735$ (W) · $173 - 12 = 161$ (N) · $662 - 177 = 485$ (A) · $661 - 188 = 473$ (P) · $335 - 60 = 275$ (E) · $978 - 121 = 857$ (F) · $643 - 345 = 298$ (I) · $247 - 102 = 145$ (S) · $881 - 36 = 845$ (C) · $527 - 309 = 218$ (D)

Clue 3 (Place value): "THE VILLAIN SHRINKS FROM A LAUGHTER CHARM"

What is the value of the 5 in 8,756? = 50 (T) · What is the value of the 4 in 347? = 40 (N) · What is the value of the 8 in 8,320? = 8000 (C) · What is the value of the 3 in 387? = 300 (S) · What is the value of the 1 in 1,063? = 1000 (I) · What is the value of the 1 in 8,518? = 10 (M) · What is the value of the 8 in 789? = 80 (A) · What is the value of the 9 in 8,794? = 90 (F) · What is the value of the 6 in 6,348? = 6000 (G) · What is the value of the 2 in 8,238? = 200 (R) · What is the value of the 4 in 84,826? = 4000 (U) · What is the value of the 5 in 5,380? = 5000 (O) · What is the value of the 2 in 92,371? = 2000 (E) · What is the value of the 4 in 2,400? = 400 (V) · What is the value of the 2 in 5,025? = 20 (H) · What is the value of the 6 in 678? = 600 (L) · What is the value of the 6 in 8,062? = 60 (K)

Clue 4 (Multi-step word problems): "SANDY BLOND"

There were 79 spellbooks in all. 2 Gryffindor House used 26 spellbooks each. The other 3 Gryffindor House shared the rest equally. How many spellbooks did each of the other Gryffindor House get? = 9 (S) · Prefect earned 5 spellbooks in each of 2 rounds, plus 33 bonus spellbooks. Then 7 spellbooks were lost. How many spellbooks are left? = 36 (D) · Prefect earned 8 chocolate frogs in each of 2 rounds, plus 6 bonus chocolate frogs. Then 14 chocolate frogs were lost. How many chocolate frogs are left? = 8 (Y) · Prefect collected 64 crystal vials in the morning and 32 crystal vials in the afternoon, then split them equally among 6 Gryffindor House. How many crystal vials did each get? = 16 (A) · There were 90 crystal vials in all. 2 Gryffindor House used 11 crystal vials each. The other 4 Gryffindor House shared the rest equally. How many crystal vials did each of the other Gryffindor House get? = 17 (N) · There were 388 crystal vials in all. 4 Gryffindor House used 37 crystal vials each. The other 6 Gryffindor House shared the rest equally. How many crystal vials did each of the other Gryffindor House get? = 40 (L) · Prefect earned 2 chocolate frogs in each of 3 rounds, plus 42 bonus chocolate frogs. Then 15 chocolate frogs were lost. How many chocolate frogs are left? = 33 (B)

Clue 5 (Division facts (1-12)): surviving statement is box 1 → Seamus Finnigan

$30 \div 6 = 5$ · $36 \div 6 = 6$ · $8 \div 4 = 2$ · $84 \div 7 = 12$ · $40 \div 4 = 10$ · $44 \div 4 = 11$ · $24 \div 3 = 8$ · $15 \div 5 = 3$ · $24 \div 6 = 4$ · $49 \div 7 = 7$ · $45 \div 5 = 9$