The Great Dragon Hatchery Mystery

Grade 6 math · Percentages, Exponents, Order of operations, Multiplication, Division · Reading level grades 3-4

Detective: _____ **Date:** _____

Someone snuck into the Cloudpeak Hatchery and hid the Golden Starfruit just before hatching hour! The sanctuary dragons are all gentle, but one naughty dragon wanted the treat for themselves. Use your detective skills and solve the clues to figure out who took it!

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 Mischievous Dragon is _____

Possible suspects

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

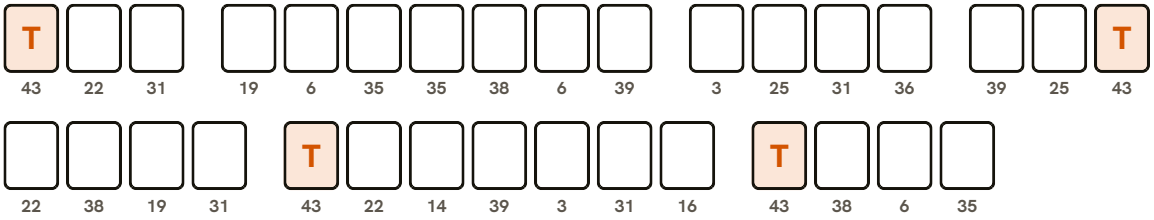
NAME	BREATH ELEMENT	SPECIAL TRAIT	DOMINANT WING	SCALE COLOR	TRICKY WEAKNESS
Shadow	Crystal Armor	Magma Stomp	Left Winged	Ruby Scales	Sneezes From Pepper
Blaze	Spark Blast	Cloud Cloak	Right Winged	Ruby Scales	Loves Whistling
Jasper	Spark Blast	Star Glow	Right Winged	Emerald Scales	Fascinated By Mirrors
Aura	Frost Breath	Star Glow	Left Winged	Ruby Scales	Loves Whistling
Nova	Frost Breath	Moon Glide	Right Winged	Sapphire Scales	Fascinated By Mirrors
Zephyr	Spark Blast	Moon Glide	Left Winged	Emerald Scales	Loves Whistling
Pebble	Frost Breath	Thunder Tail	Right Winged	Sapphire Scales	Loves Whistling
Sol	Sun Fire	Moon Glide	Right Winged	Sapphire Scales	Loves Whistling
Talon	Spark Blast	Magma Stomp	Right Winged	Sapphire Scales	Loves Whistling
Ember	Crystal Armor	Moon Glide	Right Winged	Ruby Scales	Fascinated By Mirrors
Ignis	Crystal Armor	Thunder Tail	Right Winged	Emerald Scales	Fascinated By Mirrors
Copper	Frost Breath	Magma Stomp	Left Winged	Emerald Scales	Loves Whistling
Frostwing	Frost Breath	Magma Stomp	Left Winged	Emerald Scales	Fascinated By Mirrors
Stormy	Gale Wings	Thunder Tail	Left Winged	Ruby Scales	Sneezes From Pepper
Bramble	Gale Wings	Magma Stomp	Right Winged	Ruby Scales	Loves Whistling
Pyre	Sun Fire	Cloud Cloak	Right Winged	Ruby Scales	Loves Whistling
Rory	Gale Wings	Star Glow	Right Winged	Emerald Scales	Loves Whistling
Orion	Crystal Armor	Moon Glide	Left Winged	Ruby Scales	Sneezes From Pepper
Cinder	Gale Wings	Moon Glide	Right Winged	Ruby Scales	Loves Whistling
Whisper	Frost Breath	Thunder Tail	Right Winged	Ruby Scales	Loves Whistling
Glimmer	Frost Breath	Cloud Cloak	Left Winged	Ruby Scales	Fascinated By Mirrors

make your own at mathcrackers.com

CLUE 1 Percentages

Warden Pip calculates what percentage of the roost supplies were moved to rule out one suspect trait.

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



5% of 860 = ☐ → T

50% of 76 = ☐ → A

25% of 76 = ☐ → V

5% of 700 = ☐ → L

75% of 52 = ☐ → N

20% of 15 = ☐ → D

40% of 90 = ☐ → S

20% of 125 = ☐ → O

10% of 310 = ☐ → E

40% of 55 = ☐ → H

75% of 8 = ☐ → I

5% of 320 = ☐ → R

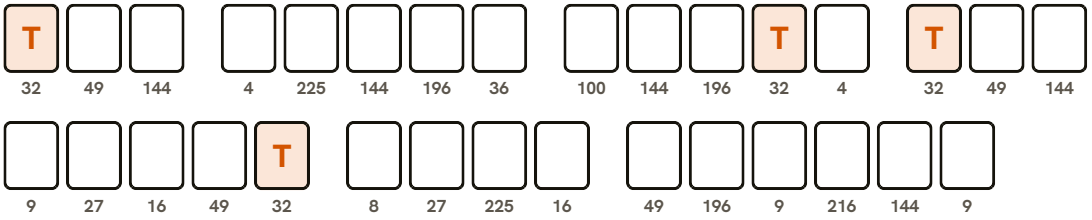
50% of 28 = ☐ → U

Scratch space:

CLUE 2 Exponents

To open the sealed sanctuary gate, Pip cracks an exponent power code etched into the dragon stone.

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



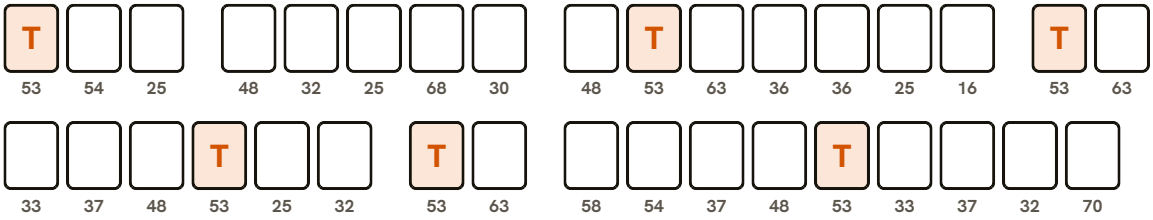
2^5 = ☐ → T	6^2 = ☐ → K	3^3 = ☐ → I	2^2 = ☐ → S
2^3 = ☐ → W	14^2 = ☐ → A	2^4 = ☐ → G	3^2 = ☐ → R
7^2 = ☐ → H	15^2 = ☐ → N	12^2 = ☐ → E	10^2 = ☐ → B
6^3 = ☐ → D			

Scratch space:

CLUE 3 Order of operations

Pip solves a multi-step formula using the correct order of operations to reveal a hidden witness note.

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



29 + 6 × 4 = ☐ → T

5 × 8 - 4 = ☐ → P

12 × 3 - 4 = ☐ → N

11 × 7 - 19 = ☐ → W

1 + 5 × 3 = ☐ → D

5 × 9 - 15 = ☐ → K

9 × 7 - 26 = ☐ → I

43 + 3 × 9 = ☐ → G

7 + 7 × 8 = ☐ → O

5 × 9 - 12 = ☐ → L

13 + 2 × 6 = ☐ → E

11 × 7 - 23 = ☐ → H

10 × 7 - 2 = ☐ → A

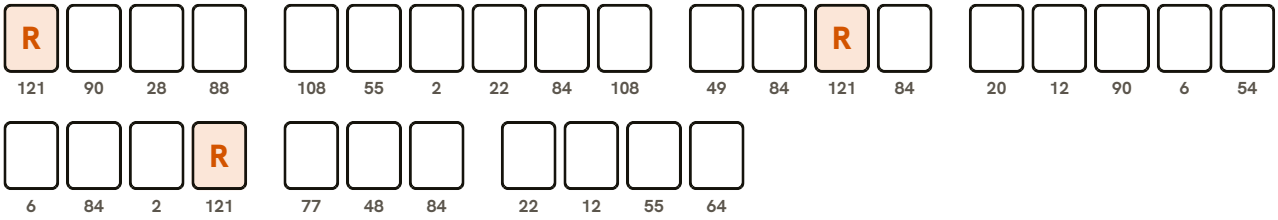
7 × 11 - 29 = ☐ → S

Scratch space:

CLUE 4 Multiplication facts (1-12)

Pip counts the total nesting crystals by multiplying the rows along the high cliff ledge.

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



11 × 11 = ☐ → R

4 × 12 = ☐ → H

2 × 10 = ☐ → F

6 × 9 = ☐ → D

3 × 4 = ☐ → O

11 × 5 = ☐ → C

12 × 7 = ☐ → E

12 × 9 = ☐ → S

8 × 11 = ☐ → Y

2 × 1 = ☐ → A

2 × 11 = ☐ → L

6 × 1 = ☐ → N

7 × 7 = ☐ → W

11 × 7 = ☐ → T

4 × 7 = ☐ → B

10 × 9 = ☐ → U

8 × 8 = ☐ → K

Scratch space:

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

Pip divides the remaining clues equally among the sanctuary guards to narrow down the final report.

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:

70 ÷ 7 = ☐	40 ÷ 8 = ☐	66 ÷ 6 = ☐	16 ÷ 8 = ☐	48 ÷ 12 = ☐
88 ÷ 11 = ☐	6 ÷ 6 = ☐	48 ÷ 8 = ☐	45 ÷ 5 = ☐	144 ÷ 12 = ☐
49 ÷ 7 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain blew a cold frost breath, then rumbled a thunder tail.
2. The villain shot a sudden spark blast, then rumbled a thunder tail.
3. The villain blazed a bright sun fire, then wrapped in a cloud cloak.
4. The villain blew a cold frost breath, then landed with magma stomp.
5. The villain flapped a giant gale wing, then soared on a moon glide.
6. The villain flapped a giant gale wing, then rumbled a thunder tail.
7. The villain blew a cold frost breath, then wrapped in a cloud cloak.
8. The villain blazed a bright sun fire, then soared on a moon glide.
9. The villain flapped a giant gale wing, then wrapped in a cloud cloak.
10. The villain flapped a giant gale wing, then landed with magma stomp.
11. The villain shot a sudden spark blast, then wrapped in a cloud cloak.
12. The villain blazed a bright sun fire, then landed with magma stomp.

TEACHER / PARENT

Answer Key

The Great Dragon Hatchery Mystery

Culprit: Pyre

Sun Fire · Cloud Cloak · Right Winged · Ruby Scales · Loves Whistling

Trail: Start 21 → Clue 1 17 → Clue 2 10 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Percentages): "THE VILLAIN DOES NOT HAVE THUNDER TAIL"

5% of 860 = 43 (T) · 50% of 76 = 38 (A) · 25% of 76 = 19 (V) · 5% of 700 = 35 (L) · 75% of 52 = 39 (N) · 20% of 15 = 3 (D) · 40% of 90 = 36 (S) · 20% of 125 = 25 (O) · 10% of 310 = 31 (E) · 40% of 55 = 22 (H) · 75% of 8 = 6 (I) · 5% of 320 = 16 (R) · 50% of 28 = 14 (U)

Clue 2 (Exponents): "THE SNEAK BEATS THE RIGHT WING HARDER"

2^5 = 32 (T) · 6^2 = 36 (K) · 3^3 = 27 (I) · 2^2 = 4 (S) · 2^3 = 8 (W) · 14^2 = 196 (A) · 2^4 = 16 (G) · 3^2 = 9 (R) · 7^2 = 49 (H) · 15^2 = 225 (N) · 12^2 = 144 (E) · 10^2 = 100 (B) · 6^3 = 216 (D)

Clue 3 (Order of operations): "THE SNEAK STOPPED TO LISTEN TO WHISTLING"

29 + 6 × 4 = 53 (T) · 5 × 8 - 4 = 36 (P) · 12 × 3 - 4 = 32 (N) · 11 × 7 - 19 = 58 (W) · 1 + 5 × 3 = 16 (D) · 5 × 9 - 15 = 30 (K) · 9 × 7 - 26 = 37 (I) · 43 + 3 × 9 = 70 (G) · 7 + 7 × 8 = 63 (O) · 5 × 9 - 12 = 33 (L) · 13 + 2 × 6 = 25 (E) · 11 × 7 - 23 = 54 (H) · 10 × 7 - 2 = 68 (A) · 7 × 11 - 29 = 48 (S)

Clue 4 (Multiplication facts (1-12)): "RUBY SCALES WERE FOUND NEAR THE LOCK"

11 × 11 = 121 (R) · 4 × 12 = 48 (H) · 2 × 10 = 20 (F) · 6 × 9 = 54 (D) · 3 × 4 = 12 (O) · 11 × 5 = 55 (C) · 12 × 7 = 84 (E) · 12 × 9 = 108 (S) · 8 × 11 = 88 (Y) · 2 × 1 = 2 (A) · 2 × 11 = 22 (L) · 6 × 1 = 6 (N) · 7 × 7 = 49 (W) · 11 × 7 = 77 (T) · 4 × 7 = 28 (B) · 10 × 9 = 90 (U) · 8 × 8 = 64 (K)

Clue 5 (Division facts (1-12)): surviving statement is box 3 → Pyre

70 ÷ 7 = 10 · 40 ÷ 8 = 5 · 66 ÷ 6 = 11 · 16 ÷ 8 = 2 · 48 ÷ 12 = 4 · 88 ÷ 11 = 8 · 6 ÷ 6 = 1 · 48 ÷ 8 = 6 · 45 ÷ 5 = 9 · 144 ÷ 12 = 12 · 49 ÷ 7 = 7