The Case of the Missing Star Tiara

Grade 2 math · Place value, Addition, Subtraction, Skip counting, Missing addends · Reading level grades 3-4

Detective: _____ **Date:** _____

The magic Royal Star Tiara has vanished from the cloud vault in Sky Sanctuary! The Head Star Keeper needs your detective skills to follow the sparkling clues and find out which alicorn 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 tiara thief is _____

Possible suspects

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

NAME	MAGIC TYPE	WING STYLE	DOMINANT HOOF	MANE COLOR	FAVORITE SNACK
Twinkle Crest	Sun Flare	Silver Wings	Left Hoofed	Purple Mane	Sparkle Berry
Kira Shimmer	Moon Glow	Silver Wings	Left Hoofed	Purple Mane	Sparkle Berry
Luna Meadow	Moon Glow	Rainbow Wings	Right Hoofed	Purple Mane	Sparkle Berry
Dazzle Spark	Sun Flare	Crystal Wings	Right Hoofed	Purple Mane	Glitter Dust
Una Zephyr	Cloud Weaving	Silver Wings	Left Hoofed	Pink Mane	Sparkle Berry
Hazel Glow	Cloud Weaving	Rainbow Wings	Left Hoofed	Blue Mane	Glitter Dust
Echo Feather	Moon Glow	Silver Wings	Right Hoofed	Purple Mane	Sparkle Berry
Opal Whicker	Moon Glow	Stardust Wings	Left Hoofed	Pink Mane	Glitter Dust
Rosy Flutter	Sun Flare	Golden Wings	Left Hoofed	Purple Mane	Sparkle Berry
Iris Beam	Cloud Weaving	Rainbow Wings	Left Hoofed	Purple Mane	Sparkle Berry
Zoe Stardust	Cloud Weaving	Golden Wings	Left Hoofed	Purple Mane	Sparkle Berry
Pip Skyward	Prism Beam	Rainbow Wings	Left Hoofed	Pink Mane	Golden Apple
Glimmer Hoof	Moon Glow	Crystal Wings	Right Hoofed	Purple Mane	Sparkle Berry
Mist Mistral	Cloud Weaving	Rainbow Wings	Left Hoofed	Blue Mane	Golden Apple
Celestia Star	Moon Glow	Golden Wings	Left Hoofed	Blue Mane	Sparkle Berry
Skye Dancer	Moon Glow	Rainbow Wings	Left Hoofed	Purple Mane	Sparkle Berry
Astral Dash	Moon Glow	Crystal Wings	Left Hoofed	Purple Mane	Golden Apple
Willa Wing	Prism Beam	Silver Wings	Right Hoofed	Purple Mane	Sparkle Berry
Quartz Swift	Moon Glow	Crystal Wings	Right Hoofed	Pink Mane	Sparkle Berry
Jasmine Prism	Cloud Weaving	Rainbow Wings	Right Hoofed	Purple Mane	Sparkle Berry
Breezy Breeze	Moon Glow	Golden Wings	Right Hoofed	Purple Mane	Glitter Dust

CLUE 1 Place value

You examine the star code dial on the castle gate to read the place value puzzle left by the guard.

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

T																	T		
17	11	65	36	21	52	52	83	21	15	45	49	65	20	15	49	17			
11	83	36	65	20	21	52	36	65	88	18	21	15	50	20					

What number has 1 ten and 7 ones? ☐ → T

What number has 2 tens and 1 one? ☐ → I

What number has 1 ten and 5 ones? ☐ → N

What number has 8 tens and 3 ones? ☐ → A

What number has 1 ten and 1 one? ☐ → H

What number has 2 tens and 0 ones? ☐ → S

What number has 5 tens and 2 ones? ☐ → L

What number has 4 tens and 5 ones? ☐ → D

What number has 1 ten and 8 ones? ☐ → W

What number has 8 tens and 8 ones? ☐ → R

What number has 5 tens and 0 ones? ☐ → G

What number has 4 tens and 9 ones? ☐ → O

What number has 3 tens and 6 ones? ☐ → V

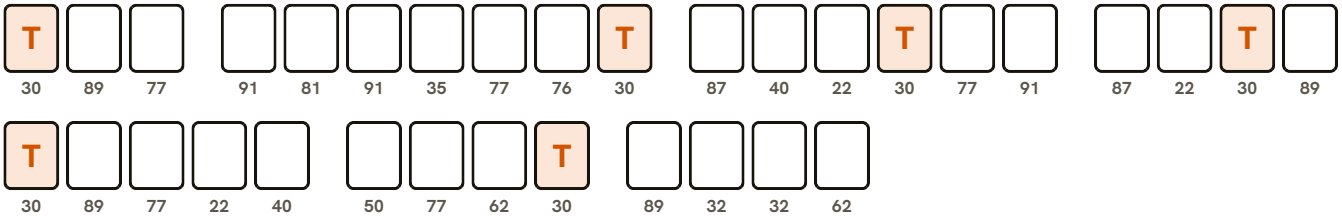
What number has 6 tens and 5 ones? ☐ → E

Scratch space:

CLUE 2 Addition

> Next you add up all the enchanted crystals found near the throne room to discover the total count.

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



21 + 9 = ☐ → T

47 + 29 = ☐ → C

33 + 54 = ☐ → W

23 + 39 = ☐ → F

53 + 24 = ☐ → E

16 + 19 = ☐ → P

34 + 57 = ☐ → S

57 + 24 = ☐ → U

33 + 17 = ☐ → L

10 + 12 = ☐ → I

28 + 12 = ☐ → R

20 + 12 = ☐ → O

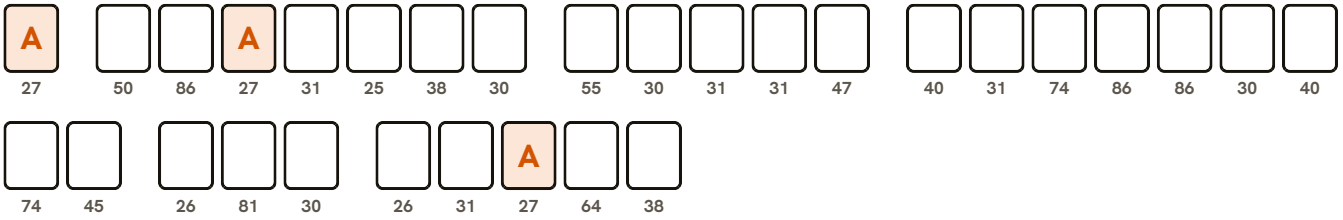
58 + 31 = ☐ → H

Scratch space:

CLUE 3 Subtraction

> Then you subtract the stolen cloud gems from the total inventory to find what remains.

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



38 - 11 = ☐ → **A**

104 - 40 = ☐ → **I**

116 - 30 = ☐ → **P**

51 - 6 = ☐ → **N**

86 - 5 = ☐ → **H**

54 - 28 = ☐ → **T**

65 - 35 = ☐ → **E**

50 - 12 = ☐ → **L**

85 - 38 = ☐ → **Y**

81 - 7 = ☐ → **O**

73 - 33 = ☐ → **D**

52 - 2 = ☐ → **S**

66 - 11 = ☐ → **B**

57 - 26 = ☐ → **R**

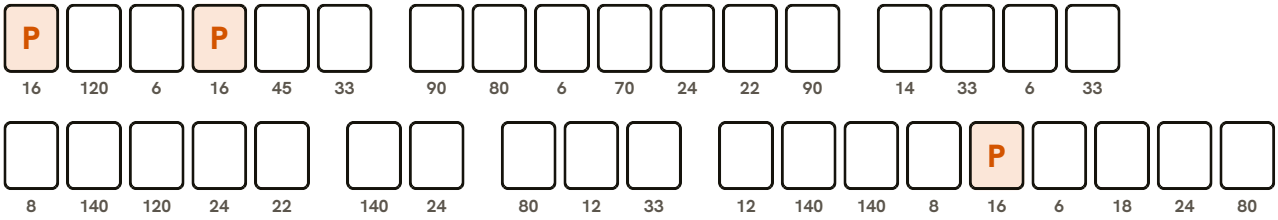
30 - 5 = ☐ → **K**

Scratch space:

CLUE 4 Skip counting

After that you follow a path of glowing horseshoe prints by skip counting in groups of five.

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



Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, ___, 18, 20 ☐ → P

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, ___, 24, 26 ☐ → D

Skip-count by 2s. Fill the blank: 2, 4, ___, 8, 10 ☐ → R

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, ___, 100, 110 ☐ → S

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, ___, 21, 24 ☐ → I

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, ___, 150, 160 ☐ → O

Skip-count by 2s. Fill the blank: 2, 4, 6, ___, 10, 12 ☐ → F

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, ___, 130, 140 ☐ → U

Skip-count by 3s. Fill the blank: 3, 6, 9, ___, 15, 18 ☐ → H

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, ___, 80, 90 ☐ → A

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, ___, 26, 28 ☐ → N

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, ___, 16, 18 ☐ → W

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, ___, 36, 39 ☐ → E

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, ___, 90, 100 ☐ → T

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, ___, 50, 55 ☐ → L

Scratch space:

CLUE 5 Missing addends - the last clue

Finally you figure out the missing addend to balance the magic tiara scale and unmask the culprit.

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:

8 + ___ = 16 ☐	3 + ___ = 7 ☐	7 + ___ = 19 ☐	10 + ___ = 12 ☐
2 + ___ = 13 ☐	1 + ___ = 10 ☐	5 + ___ = 15 ☐	9 + ___ = 12 ☐
6 + ___ = 13 ☐	10 + ___ = 16 ☐	9 + ___ = 10 ☐	

Step 2 - cross out the sentence with each answer:

1. The villain fired a prism beam, then flapped stardust wings.
2. The villain blazed a sun flare, then flapped rainbow wings.
3. The villain shot star magic into the sky, then flapped silver wings.
4. The villain blazed a sun flare, then flapped golden wings.
5. The villain shone a moon glow, then flapped rainbow wings.
6. The villain wove a cloud barrier, then flapped silver wings.
7. The villain shone a moon glow, then flapped golden wings.
8. The villain wove a cloud barrier, then flapped golden wings.
9. The villain wove a cloud barrier, then flapped crystal wings.
10. The villain blazed a sun flare, then flapped crystal wings.
11. The villain fired a prism beam, then flapped golden wings.
12. The villain wove a cloud barrier, then flapped rainbow wings.

TEACHER / PARENT

Answer Key

The Case of the Missing Star Tiara

Culprit: Skye Dancer

Moon Glow · Rainbow Wings · Left Hoofed · Purple Mane · Sparkle Berry

Trail: Start 21 → Clue 1 16 → Clue 2 10 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Place value): "THE VILLAIN DOES NOT HAVE SILVER WINGS"

What number has 1 ten and 7 ones? = 17 (T) · What number has 2 tens and 1 one? = 21 (I) · What number has 1 ten and 5 ones? = 15 (N) · What number has 8 tens and 3 ones? = 83 (A) · What number has 1 ten and 1 one? = 11 (H) · What number has 2 tens and 0 ones? = 20 (S) · What number has 5 tens and 2 ones? = 52 (L) · What number has 4 tens and 5 ones? = 45 (D) · What number has 1 ten and 8 ones? = 18 (W) · What number has 8 tens and 8 ones? = 88 (R) · What number has 5 tens and 0 ones? = 50 (G) · What number has 4 tens and 9 ones? = 49 (O) · What number has 3 tens and 6 ones? = 36 (V) · What number has 6 tens and 5 ones? = 65 (E)

Clue 2 (Addition): "THE SUSPECT WRITES WITH THEIR LEFT HOOF"

21 + 9 = 30 (T) · 47 + 29 = 76 (C) · 33 + 54 = 87 (W) · 23 + 39 = 62 (F) · 53 + 24 = 77 (E) · 16 + 19 = 35 (P) · 34 + 57 = 91 (S) · 57 + 24 = 81 (U) · 33 + 17 = 50 (L) · 10 + 12 = 22 (I) · 28 + 12 = 40 (R) · 20 + 12 = 32 (O) · 58 + 31 = 89 (H)

Clue 3 (Subtraction): "A SPARKLE BERRY DROPPED ON THE TRAIL"

38 - 11 = 27 (A) · 104 - 40 = 64 (I) · 116 - 30 = 86 (P) · 51 - 6 = 45 (N) · 86 - 5 = 81 (H) · 54 - 28 = 26 (T) · 65 - 35 = 30 (E) · 50 - 12 = 38 (L) · 85 - 38 = 47 (Y) · 81 - 7 = 74 (O) · 73 - 33 = 40 (D) · 52 - 2 = 50 (S) · 66 - 11 = 55 (B) · 57 - 26 = 31 (R) · 30 - 5 = 25 (K)

Clue 4 (Skip counting): "PURPLE STRANDS WERE FOUND ON THE HOOFPRINT"

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, ___, 18, 20 = 16 (P) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, ___, 24, 26 = 22 (D) · Skip-count by 2s. Fill the blank: 2, 4, ___, 8, 10 = 6 (R) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, ___, 100, 110 = 90 (S) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, ___, 21, 24 = 18 (I) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, ___, 150, 160 = 140 (O) · Skip-count by 2s. Fill the blank: 2, 4, 6, ___, 10, 12 = 8 (F) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, ___, 130, 140 = 120 (U) · Skip-count by 3s. Fill the blank: 3, 6, 9, ___, 15, 18 = 12 (H) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, ___, 80, 90 = 70 (A) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, ___, 26, 28 = 24 (N) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, ___, 16, 18 = 14 (W) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, ___, 36, 39 = 33 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, ___, 90, 100 = 80 (T) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, ___, 50, 55 = 45 (L)

Clue 5 (Missing addends): surviving statement is box 5 → Skye Dancer

8 + ___ = 16 = 8 · 3 + ___ = 7 = 4 · 7 + ___ = 19 = 12 · 10 + ___ = 12 = 2 · 2 + ___ = 13 = 11 · 1 + ___ = 10 = 9 · 5 + ___ = 15 = 10 · 9 + ___ = 12 = 3 · 6 + ___ = 13 = 7 · 10 + ___ = 16 = 6 · 9 + ___ = 10 = 1