



The Great Cosmic Pearl Caper

Grade 5 math · Rounding, Place value, Skip counting, Fractions of a number, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

An sneaky space-thief has swiped the Great Cosmic Pearl from the Star-Cat Temple! The Cosmic Coral Guardian needs your expert detective skills to track the culprit through the glowing stardust of the nebula.

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 Star-Snatcher is _____

Possible suspects

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

NAME	SIGNATURE COSMIC GEAR	SPECIAL DEFENSE ABILITY	STEERING GRIP STYLE	MANE COLOR	MAJOR DISTRACTION
Comet	Rocket-boost	Spark-shield	Left-handed	Pink	Yarn-balls
Marina	Warp-drive	Solar-flare	Right-handed	Purple	Water-balloons
Sprocket	Star-shield	Spark-shield	Right-handed	Pink	Yarn-balls
Ariel	Laser-tail	Spark-shield	Left-handed	Pink	Magnets
Gizmo	Rocket-boost	Spark-shield	Right-handed	Pink	Water-balloons
Nova	Star-shield	Plasma-claw	Left-handed	Blue	Water-balloons
Orion	Laser-tail	Spark-shield	Right-handed	Pink	Yarn-balls
Calypso	Warp-drive	Solar-flare	Right-handed	Purple	Yarn-balls
Rusty	Star-shield	Bubble-blast	Right-handed	Blue	Yarn-balls
Coral	Laser-tail	Plasma-claw	Right-handed	Pink	Yarn-balls
Ziggy	Horn-beam	Plasma-claw	Left-handed	Purple	Yarn-balls
Cleo	Star-shield	Plasma-claw	Right-handed	Blue	Yarn-balls
Triton	Warp-drive	Solar-flare	Left-handed	Pink	Water-balloons
Halley	Warp-drive	Spark-shield	Left-handed	Purple	Magnets
Astra	Warp-drive	Nebula-mist	Right-handed	Pink	Yarn-balls
Bolt	Laser-tail	Solar-flare	Right-handed	Purple	Magnets
Cosmo	Warp-drive	Bubble-blast	Left-handed	Blue	Yarn-balls
Luna	Warp-drive	Bubble-blast	Left-handed	Purple	Magnets
Barnacle	Horn-beam	Bubble-blast	Left-handed	Pink	Yarn-balls
Pixel	Rocket-boost	Solar-flare	Right-handed	Pink	Water-balloons
Felix	Warp-drive	Plasma-claw	Right-handed	Pink	Yarn-balls

CLUE 1 Rounding

Our long-range radar scans the asteroid belt, but the energy readouts round to the nearest thousand. Let us estimate the thief's path.

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

T			T											T			
20	5000	2300	20	5000	9000	2300	3000	4300	1700	2300	1100	110	1700	20	370	1100	2300
											T						
110	2300	3700	370	70	900	170	9000	1100	20								

Round 18 to the nearest ten → **T**

Round 9,495 to the nearest thousand → **I**

Round 174 to the nearest ten → **M**

Round 1,716 to the nearest hundred → **O**

Round 3,728 to the nearest hundred → **B**

Round 894 to the nearest hundred → **A**

Round 1,147 to the nearest hundred → **S**

Round 368 to the nearest ten → **U**

Round 5,218 to the nearest thousand → **H**

Round 110 to the nearest ten → **N**

Round 4,287 to the nearest hundred → **D**

Round 2,559 to the nearest thousand → **F**

Round 2,302 to the nearest hundred → **E**

Round 66 to the nearest ten → **L**

Scratch space:

CLUE 2 Place value

We found a scrambled security code on the star-ship control panel. We must decode the value of the digit in the ten-thousands place.

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

T								T											
100	400	6000	7000	10	70	400	100	400	30	200	800	6000	800	70	7000	10	2000		
				T					T										
20	900	7000	30	100	900	400	6000	800	100	400	6000	1000	30	90	90	20			

What is the value of the 1 in 333,195? → **T**

What is the value of the 3 in 92,230? → **A**

What is the value of the 8 in 234,831? → **D**

What is the value of the 1 in 70,517? → **I**

What is the value of the 7 in 149,475? → **G**

What is the value of the 7 in 57,424? → **R**

What is the value of the 2 in 881,426? → **S**

What is the value of the 9 in 48,793? → **L**

What is the value of the 6 in 16,789? → **E**

What is the value of the 9 in 556,978? → **C**

What is the value of the 1 in 71,308? → **W**

What is the value of the 2 in 13,277? → **N**

What is the value of the 2 in 32,477? → **P**

What is the value of the 4 in 789,495? → **H**

Scratch space:

CLUE 3

The space-port runway has flashing neon beacons. They blink in a steady, skip-counting pattern that we must follow to avoid the lasers.

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

25 33 22 65 14 100 22 36 80 33 22 12 80 22 25 33 18 22 80

80 30 30 100 65 20 18 12 27 20 100 100 40

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, __, 30, 35 → **T**

Skip-count by 10s. Fill the blank: 10, 20, 30, __, 50, 60 → **S**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 → **F**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, __, 30, 33 → **B**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 → **Y**

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, __, 90, 100 → **W**

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, , 39, 42 → **D**

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, , 35, 40 →

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, , 110, 120 → **L**

Skip-count by 3s. Fill the blank: 3, 6, 9, __, 15, 18 → **N**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, __, 20, 22 → **R**

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

→

H

Skip-count by 5s. Fill the blank: 5, 10, 15, __, 25, 30

→

A

Scratch space:

CLUE 4
Fractions of a number

The star-cat temple vault is locked by a puzzle. We need to calculate a precise fraction of the total fuel crystals to open the door.

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

W														
2	3	13	26	29	12	32	10	19	12	18	15	30	12	3
11	16	27	30	12	32	11	30	16	16	8	3	11	38	3

$1/10 \text{ of } 20 = \square \rightarrow \text{W}$

$1/8 \text{ of } 104 = \square \rightarrow \text{F}$

$2/8 \text{ of } 152 = \square \rightarrow \text{C}$

$2/6 \text{ of } 81 = \square \rightarrow \text{R}$

$2/6 \text{ of } 57 = \square \rightarrow \text{I}$

$2/5 \text{ of } 20 = \square \rightarrow \text{H}$

$1/10 \text{ of } 180 = \square \rightarrow \text{K}$

$3/10 \text{ of } 40 = \square \rightarrow \text{N}$

$1/6 \text{ of } 180 = \square \rightarrow \text{A}$

$2/8 \text{ of } 60 = \square \rightarrow \text{M}$

$2/6 \text{ of } 78 = \square \rightarrow \text{O}$

$2/8 \text{ of } 12 = \square \rightarrow \text{E}$

$2/8 \text{ of } 116 = \square \rightarrow \text{U}$

$4/8 \text{ of } 64 = \square \rightarrow \text{D}$

$1/10 \text{ of } 110 = \square \rightarrow \text{S}$

$2/5 \text{ of } 25 = \square \rightarrow \text{P}$

$4/10 \text{ of } 40 = \square \rightarrow \text{T}$

Scratch space:

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

To power up our pursuit thrusters, we must share the remaining energy cells equally among our fleet of patrol star-ships.

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:

$36 \div 4 = \boxed{}$

$48 \div 12 = \boxed{}$

$35 \div 7 = \boxed{}$

$6 \div 2 = \boxed{}$

$120 \div 10 = \boxed{}$

$22 \div 11 = \boxed{}$

$132 \div 12 = \boxed{}$

$24 \div 3 = \boxed{}$

$21 \div 3 = \boxed{}$

$2 \div 2 = \boxed{}$

$100 \div 10 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain charged up their horn-beam, then raised a bright spark-shield.
2. The villain charged up their horn-beam, then unleashed a bubble-blast.
3. The villain activated their star-shield, then vanished into the nebula-mist.
4. The villain engaged the warp-drive, then swiped with a plasma-claw.
5. The villain activated their star-shield, then raised a bright spark-shield.
6. The villain fired a quick laser-tail beam, then raised a bright spark-shield.
7. The villain ignited their rocket-boost, then triggered a blinding solar-flare.
8. The villain ignited their rocket-boost, then raised a bright spark-shield.
9. The villain fired a quick laser-tail beam, then swiped with a plasma-claw.
10. The villain fired a quick laser-tail beam, then unleashed a bubble-blast.
11. The villain ignited their rocket-boost, then swiped with a plasma-claw.
12. The villain activated their star-shield, then swiped with a plasma-claw.

Answer Key

The Great Cosmic Pearl Caper

Culprit: Orion

Laser-tail · Spark-shield · Right-handed · Pink · Yarn-balls

Trail: Start 21 → Clue 1 20 → Clue 2 11 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE THIEF DOES NOT USE NEBULA MIST"

Round 18 to the nearest ten = 20 (T) · Round 9,495 to the nearest thousand = 9000 (I) · Round 174 to the nearest ten = 170 (M) · Round 1,716 to the nearest hundred = 1700 (O) · Round 3,728 to the nearest hundred = 3700 (B) · Round 894 to the nearest hundred = 900 (A) · Round 1,147 to the nearest hundred = 1100 (S) · Round 368 to the nearest ten = 370 (U) · Round 5,218 to the nearest thousand = 5000 (H) · Round 110 to the nearest ten = 110 (N) · Round 4,287 to the nearest hundred = 4300 (D) · Round 2,559 to the nearest thousand = 3000 (F) · Round 2,302 to the nearest hundred = 2300 (E) · Round 66 to the nearest ten = 70 (L)

Clue 2 (Place value): "THE RIGHT HANDED GRIP SCRATCHED THE WALLS"

What is the value of the 1 in 333,195? = 100 (T) · What is the value of the 3 in 92,230? = 30 (A) · What is the value of the 8 in 234,831? = 800 (D) · What is the value of the 1 in 70,517? = 10 (I) · What is the value of the 7 in 149,475? = 70 (G) · What is the value of the 7 in 57,424? = 7000 (R) · What is the value of the 2 in 881,426? = 20 (S) · What is the value of the 9 in 48,793? = 90 (L) · What is the value of the 6 in 16,789? = 6000 (E) · What is the value of the 9 in 556,978? = 900 (C) · What is the value of the 1 in 71,308? = 1000 (W) · What is the value of the 2 in 13,277? = 200 (N) · What is the value of the 2 in 32,477? = 2000 (P) · What is the value of the 4 in 789,495? = 400 (H)

Clue 3 (Skip counting): "THEY FLED WHEN WE THREW WOOL YARN BALLS"

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, __, 30, 35 = 25 (T) · Skip-count by 10s. Fill the blank: 10, 20, 30, __, 50, 60 = 40 (S) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, __, 16, 18 = 14 (F) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, __, 30, 33 = 27 (B) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, __, 70, 75 = 65 (Y) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, __, 24, 26 = 22 (E) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, __, 90, 100 = 80 (W) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, __, 39, 42 = 36 (D) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, __, 35, 40 = 30 (O) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, __, 110, 120 = 100 (L) · Skip-count by 3s. Fill the blank: 3, 6, 9, __, 15, 18 = 12 (N) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, __, 20, 22 = 18 (R) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, __, 36, 39 = 33 (H) · Skip-count by 5s. Fill the blank: 5, 10, 15, __, 25, 30 = 20 (A)

Clue 4 (Fractions of a number): "WE FOUND PINK MANE STRANDS AT THE SCENE"

$\frac{1}{10}$ of 20 = 2 (W) · $\frac{1}{8}$ of 104 = 13 (F) · $\frac{2}{8}$ of 152 = 38 (C) · $\frac{2}{6}$ of 81 = 27 (R) · $\frac{2}{6}$ of 57 = 19 (I) · $\frac{2}{5}$ of 20 = 8 (H) · $\frac{1}{10}$ of 180 = 18 (K) · $\frac{3}{10}$ of 40 = 12 (N) · $\frac{1}{6}$ of 180 = 30 (A) · $\frac{2}{8}$ of 60 = 15 (M) · $\frac{2}{6}$ of 78 = 26 (O) · $\frac{2}{8}$ of 12 = 3 (E) · $\frac{2}{8}$ of 116 = 29 (U) · $\frac{4}{8}$ of 64 = 32 (D) · $\frac{1}{10}$ of 110 = 11 (S) · $\frac{2}{5}$ of 25 = 10 (P) · $\frac{4}{10}$ of 40 = 16 (T)

Clue 5 (Division facts (1-12)): surviving statement is box 6 → Orion

$36 \div 4 = 9$ · $48 \div 12 = 4$ · $35 \div 7 = 5$ · $6 \div 2 = 3$ · $120 \div 10 = 12$ · $22 \div 11 = 2$ · $132 \div 12 = 11$ · $24 \div 3 = 8$ · $21 \div 3 = 7$ · $2 \div 2 = 1$ · $100 \div 10 = 10$