



The Cosmic Map Caper

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

Detective: _____ **Date:** _____

The Golden Star-Map has been stolen from the main deck of Starlight Station! Commander Vega needs your help. The sneaky Space Phantom left a trail of clues. Solve the math problems to crack the codes and catch the thief before they jump into hyper-space!

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 Space Phantom is _____

Possible suspects

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

NAME	JETPACK POWER	LASER TOOL	HELMET DECAL	HELMET STRIPE	SHIELD WEAKNESS
John Glenn	Ion Rocket	Gravity Hook	Right-side badge	Bright Orange	Magnetic Net
Ellen Ochoa	Warp Glider	Cosmic Welder	Left-side badge	Bright Orange	Freeze Ray
Mark Kelly	Gravity Boots	Gravity Hook	Right-side badge	Solar Yellow	Magnetic Net
Carl Sagan	Warp Glider	Cosmic Welder	Right-side badge	Neon Green	Freeze Ray
Kalpana Chawla	Ion Rocket	Asteroid Drill	Left-side badge	Solar Yellow	Freeze Ray
Gene Cernan	Solar Thruster	Photon Beam	Left-side badge	Bright Orange	Freeze Ray
Sally Ride	Plasma Jump	Stardust Scanner	Left-side badge	Bright Orange	Freeze Ray
Pete Conrad	Gravity Boots	Stardust Scanner	Right-side badge	Solar Yellow	Freeze Ray
Guion Bluford	Solar Thruster	Asteroid Drill	Left-side badge	Bright Orange	Freeze Ray
Jim Lovell	Warp Glider	Asteroid Drill	Left-side badge	Bright Orange	Freeze Ray
Chris Hadfield	Plasma Jump	Asteroid Drill	Right-side badge	Solar Yellow	Magnetic Net
Katherine Johnson	Gravity Boots	Stardust Scanner	Right-side badge	Solar Yellow	Magnetic Net
Buzz Aldrin	Plasma Jump	Photon Beam	Right-side badge	Bright Orange	Freeze Ray
Peggy Whitson	Warp Glider	Stardust Scanner	Left-side badge	Solar Yellow	Static Spark
Mae Jemison	Solar Thruster	Asteroid Drill	Right-side badge	Solar Yellow	Magnetic Net
Fred Haise	Ion Rocket	Photon Beam	Right-side badge	Solar Yellow	Static Spark
Valentina Tereshkova	Plasma Jump	Gravity Hook	Left-side badge	Neon Green	Magnetic Net
Alan Shepard	Ion Rocket	Cosmic Welder	Left-side badge	Solar Yellow	Magnetic Net
Michael Collins	Gravity Boots	Asteroid Drill	Left-side badge	Bright Orange	Magnetic Net
Edwin Hubble	Solar Thruster	Gravity Hook	Right-side badge	Solar Yellow	Freeze Ray
Neil Armstrong	Ion Rocket	Asteroid Drill	Right-side badge	Bright Orange	Magnetic Net

CLUE 1 Rounding

The security computer is locked tight. To get the first clue, we must count the packs of space food in the storage boxes and subtract the empty ones.

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

T			T											T			
90	900	20	90	900	1100	20	2000	230	9000	20	2300	2900	9000	90	130	2300	20
T				T						T							
90	900	20	2300	90	290	370	230	130	2300	90	2300	430	290	2900	2900	20	370

Round 86 to the nearest ten → **T**

Round 2,013 to the nearest thousand → **F**

Round 290 to the nearest ten → **A**

Round 127 to the nearest ten → **U**

Round 1,089 to the nearest hundred → **I**

Round 432 to the nearest ten → **C**

Round 9,454 to the nearest thousand → **O**

Round 2,916 to the nearest hundred → **N**

Round 2,282 to the nearest hundred → **S**

Round 372 to the nearest ten → **R**

Round 874 to the nearest hundred → **H**

Round 23 to the nearest ten → **E**

Round 229 to the nearest ten → **D**

Scratch space:

CLUE 2

Multi-step word problems

The tracking radar is fuzzy because of a solar storm. We need to round the distance of the escape pod to the nearest hundred to get a clear picture.

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

A witness saw the villain was L B A G .

83 64 68 37 70 24 60 64 60 64

Commander Leo earned 7 space rations in each of 2 rounds, plus 81 bonus space rations. Then 12 space rations were lost. How many space rations are left?

Answer: → L

There were 227 space rations in all. 1 Astro-Guard used 5 space rations each. The other 6 Astro-Guard shared the rest equally. How many space rations did each of the other Astro-Guard get?

Answer: → T

Commander Leo earned 2 star maps in each of 4 rounds, plus 64 bonus star maps. Then 8 star maps were lost. How many star maps are left?

Answer: → E

Commander Leo filled 7 boxes with 3 space rations each, then found 49 more space rations. How many space rations are there in all?

Answer: → S

Commander Leo collected 72 laser batteries in the morning and 24 laser batteries in the afternoon, then split them equally among 4 Astro-Guard. How many laser batteries did each get?

Answer: → I

Commander Leo collected 14 oxygen tanks in the morning and 286 oxygen tanks in the afternoon, then split them equally among 5 Astro-Guard. How many oxygen tanks did each get?

Answer: → D

There were 379 laser batteries in all. 3 Astro-Guard used 13 laser batteries each. The other 5 Astro-Guard shared the rest equally. How many laser batteries did each of the other Astro-Guard get?

Answer: → F

Scratch space:

CLUE 3 Addition

We need to fuel our pursuit ship. Let us add up the star fuel canisters from both cargo bays to get the engine running.

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

A									A									
8765	7942	2535	3660	3660	3890	3660	2535	8765	9694	6093	7037	3515	3515	2675	5327	3705	2296	

					A					A				
5327	7638	3660	2675	2296	8765	2231	3660	2296	7638	8765	2779	5327	3705	7733

$2994 + 5771 = \square \rightarrow \text{A}$	$2144 + 1561 = \square \rightarrow \text{O}$	$4391 + 3342 = \square \rightarrow \text{M}$
$1536 + 1139 = \square \rightarrow \text{S}$	$3293 + 6401 = \square \rightarrow \text{Y}$	$4675 + 2362 = \square \rightarrow \text{I}$
$3197 + 2130 = \square \rightarrow \text{T}$	$946 + 1833 = \square \rightarrow \text{N}$	$1253 + 978 = \square \rightarrow \text{C}$
$2195 + 1695 = \square \rightarrow \text{Z}$	$1437 + 1098 = \square \rightarrow \text{R}$	$1241 + 2274 = \square \rightarrow \text{L}$
$1325 + 971 = \square \rightarrow \text{P}$	$1613 + 2047 = \square \rightarrow \text{E}$	$4126 + 1967 = \square \rightarrow \text{W}$
$4876 + 3066 = \square \rightarrow \text{F}$	$5120 + 2518 = \square \rightarrow \text{H}$	

Scratch space:

CLUE 4 Subtraction

Oh no! A small space rock poked a hole in our water tank. We must subtract the leaked water from our total supply to see what is left.

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

T													T					
5550	6016	3570	3570	1410	6270	5161	6725	3176	3162	3347	1410	6802	3176	5550	6016	5161	3299	5161
					T								T					
3724	2041	3176	3347	6016	5550	3628	2041	5161	3162	3347	3570	1410	5550	2041	3176	6725	3570	

$5995 - 445 = \boxed{} \rightarrow \boxed{T}$

$9933 - 4772 = \boxed{} \rightarrow \boxed{A}$

$5856 - 2694 = \boxed{} \rightarrow \boxed{N}$

$3918 - 1877 = \boxed{} \rightarrow \boxed{R}$

$10991 - 4721 = \boxed{} \rightarrow \boxed{C}$

$6574 - 3004 = \boxed{} \rightarrow \boxed{E}$

$3781 - 482 = \boxed{} \rightarrow \boxed{D}$

$6045 - 2417 = \boxed{} \rightarrow \boxed{O}$

$4481 - 1305 = \boxed{} \rightarrow \boxed{I}$

$3399 - 52 = \boxed{} \rightarrow \boxed{G}$

$5240 - 3830 = \boxed{} \rightarrow \boxed{S}$

$10577 - 4561 = \boxed{} \rightarrow \boxed{H}$

$5863 - 2139 = \boxed{} \rightarrow \boxed{B}$

$9081 - 2356 = \boxed{} \rightarrow \boxed{P}$

$10570 - 3768 = \boxed{} \rightarrow \boxed{U}$

Scratch space:

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

We found a container of glowing moon crystals on the launchpad. Let us divide them equally among our crew members to power our scanners.

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:

$36 \div 6 = \boxed{}$

$81 \div 9 = \boxed{}$

$9 \div 9 = \boxed{}$

$132 \div 11 = \boxed{}$

$70 \div 7 = \boxed{}$

$24 \div 12 = \boxed{}$

$32 \div 4 = \boxed{}$

$7 \div 1 = \boxed{}$

$33 \div 11 = \boxed{}$

$30 \div 6 = \boxed{}$

$36 \div 9 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain glides quietly on a warp glider, then melts the lock with a cosmic welder.
2. The villain teleports using a plasma jump, then cuts the security fence with a photon beam.
3. The villain zooms off using an ion rocket, then cuts the security fence with a photon beam.
4. The villain teleports using a plasma jump, then grabs the map with a gravity hook.
5. The villain teleports using a plasma jump, then breaks the vault with an asteroid drill.
6. The villain glides quietly on a warp glider, then breaks the vault with an asteroid drill.
7. The villain teleports using a plasma jump, then melts the lock with a cosmic welder.
8. The villain leaps high with gravity boots, then locates the vault with a stardust scanner.
9. The villain blasts away with a solar thruster, then cuts the security fence with a photon beam.
10. The villain leaps high with gravity boots, then breaks the vault with an asteroid drill.
11. The villain blasts away with a solar thruster, then breaks the vault with an asteroid drill.
12. The villain leaps high with gravity boots, then melts the lock with a cosmic welder.

Answer Key

The Cosmic Map Caper

Culprit: Guion Bluford

Solar Thruster · Asteroid Drill · Left-side badge · Bright Orange · Freeze Ray

Trail: Start 21 → Clue 1 17 → Clue 2 8 → Clue 3 5 → Clue 4 4 → Clue 5 1

Clue 1 (Rounding): "THE THIEF DOES NOT USE THE STARDUST SCANNER"

Round 86 to the nearest ten = 90 (T) · Round 2,013 to the nearest thousand = 2000 (F) · Round 290 to the nearest ten = 290 (A) · Round 127 to the nearest ten = 130 (U) · Round 1,089 to the nearest hundred = 1100 (I) · Round 432 to the nearest ten = 430 (C) · Round 9,454 to the nearest thousand = 9000 (O) · Round 2,916 to the nearest hundred = 2900 (N) · Round 2,282 to the nearest hundred = 2300 (S) · Round 372 to the nearest ten = 370 (R) · Round 874 to the nearest hundred = 900 (H) · Round 23 to the nearest ten = 20 (E) · Round 229 to the nearest ten = 230 (D)

Clue 2 (Multi-step word problems): "LEFT SIDE BADGE"

Commander Leo earned 7 space rations in each of 2 rounds, plus 81 bonus space rations. Then 12 space rations were lost. How many space rations are left? = 83 (L) · There were 227 space rations in all. 1 Astro-Guard used 5 space rations each. The other 6 Astro-Guard shared the rest equally. How many space rations did each of the other Astro-Guard get? = 37 (T) · Commander Leo earned 2 star maps in each of 4 rounds, plus 64 bonus star maps. Then 8 star maps were lost. How many star maps are left? = 64 (E) · Commander Leo filled 7 boxes with 3 space rations each, then found 49 more space rations. How many space rations are there in all? = 70 (S) · Commander Leo collected 72 laser batteries in the morning and 24 laser batteries in the afternoon, then split them equally among 4 Astro-Guard. How many laser batteries did each get? = 24 (I) · Commander Leo collected 14 oxygen tanks in the morning and 286 oxygen tanks in the afternoon, then split them equally among 5 Astro-Guard. How many oxygen tanks did each get? = 60 (D) · There were 379 laser batteries in all. 3 Astro-Guard used 13 laser batteries each. The other 5 Astro-Guard shared the rest equally. How many laser batteries did each of the other Astro-Guard get? = 68 (F)

Clue 3 (Addition): "A FREEZE RAY WILL STOP THE SPACE PHANTOM"

$2994 + 5771 = 8765$ (A) · $2144 + 1561 = 3705$ (O) · $4391 + 3342 = 7733$ (M) · $1536 + 1139 = 2675$ (S) · $3293 + 6401 = 9694$ (Y) · $4675 + 2362 = 7037$ (I) · $3197 + 2130 = 5327$ (T) · $946 + 1833 = 2779$ (N) · $1253 + 978 = 2231$ (C) · $2195 + 1695 = 3890$ (Z) · $1437 + 1098 = 2535$ (R) · $1241 + 2274 = 3515$ (L) · $1325 + 971 = 2296$ (P) · $1613 + 2047 = 3660$ (E) · $4126 + 1967 = 6093$ (W) · $4876 + 3066 = 7942$ (F) · $5120 + 2518 = 7638$ (H)

Clue 4 (Subtraction): "THE ESCAPING SUIT HAD A BRIGHT ORANGE STRIPE"

$5995 - 445 = 5550$ (T) · $9933 - 4772 = 5161$ (A) · $5856 - 2694 = 3162$ (N) · $3918 - 1877 = 2041$ (R) · $10991 - 4721 = 6270$ (C) · $6574 - 3004 = 3570$ (E) · $3781 - 482 = 3299$ (D) · $6045 - 2417 = 3628$ (O) · $4481 - 1305 = 3176$ (I) · $3399 - 52 = 3347$ (G) · $5240 - 3830 = 1410$ (S) · $10577 - 4561 = 6016$ (H) · $5863 - 2139 = 3724$ (B) · $9081 - 2356 = 6725$ (P) · $10570 - 3768 = 6802$ (U)

Clue 5 (Division facts (1-12)): surviving statement is box 11 → Guion Bluford

$36 \div 6 = 6$ · $81 \div 9 = 9$ · $9 \div 9 = 1$ · $132 \div 11 = 12$ · $70 \div 7 = 10$ · $24 \div 12 = 2$ · $32 \div 4 = 8$ · $7 \div 1 = 7$ · $33 \div 11 = 3$ · $30 \div 6 = 5$ · $36 \div 9 = 4$