

The Golden Gear Caper

Grade 1 math · Addition, Subtraction, Skip counting, Place value, Missing addends · Reading level grades 1-2

Detective: _____ Date: _____

A sneaky rogue bot has taken the Golden Gear from the Head Inventor! We need to scan the scrap yard and find the culprit before they shut down the power grid.

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 bot is _____

Possible suspects

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

NAME	TOOL ARM	CHEST GADGET	SCREEN MODE	WIRE COLOR	SYSTEM GLITCH
Steel	laser drill	solar panel	neon green screen	yellow brass wire	static from magnets
Zinc	foam blaster	jet booster	neon green screen	yellow brass wire	static from magnets
Circuit	plasma torch	jet booster	neon green screen	red copper wire	reboot from loud noise
Brass	foam blaster	sonic speaker	neon green screen	yellow brass wire	reboot from loud noise
Sparky	magnet claw	radar dish	bright blue screen	red copper wire	static from magnets
Tinny	buzz saw	jet booster	neon green screen	blue steel wire	static from magnets
Beep	laser drill	radar dish	neon green screen	red copper wire	freeze from cold water
Gizmo	laser drill	siren light	neon green screen	yellow brass wire	static from magnets
Copper	magnet claw	sonic speaker	neon green screen	red copper wire	static from magnets
Byte	buzz saw	jet booster	neon green screen	yellow brass wire	freeze from cold water
Widget	foam blaster	jet booster	neon green screen	red copper wire	reboot from loud noise
Bolt	laser drill	siren light	neon green screen	yellow brass wire	freeze from cold water
Chip	buzz saw	jet booster	neon green screen	yellow brass wire	static from magnets
Sprocket	plasma torch	solar panel	bright blue screen	yellow brass wire	reboot from loud noise
Buster	buzz saw	sonic speaker	bright blue screen	yellow brass wire	reboot from loud noise
Clanky	plasma torch	sonic speaker	neon green screen	yellow brass wire	reboot from loud noise
Robo	magnet claw	jet booster	neon green screen	yellow brass wire	static from magnets
Otto	buzz saw	jet booster	neon green screen	red copper wire	static from magnets
Digit	plasma torch	sonic speaker	bright blue screen	yellow brass wire	static from magnets
Boop	foam blaster	jet booster	bright blue screen	red copper wire	freeze from cold water
Rusty	buzz saw	sonic speaker	bright blue screen	yellow brass wire	static from magnets

CLUE 1 Addition

We found a pile of dropped bolts. Let us add the bolts to find the first clue.

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

T					T							T					
4	9	11	14	19	4	7	19	11	18	20	19	4	9	15	2	11	15

										T
18	5	10	11	20	8	5	13	9	4	

$3 + 1 = \square \rightarrow$ T	$4 + 9 = \square \rightarrow$ G	$3 + 6 = \square \rightarrow$ H	$5 + 2 = \square \rightarrow$ D
$8 + 6 = \square \rightarrow$ B	$3 + 5 = \square \rightarrow$ L	$1 + 1 = \square \rightarrow$ V	$5 + 10 = \square \rightarrow$ A
$5 + 5 = \square \rightarrow$ R	$4 + 7 = \square \rightarrow$ E	$3 + 2 = \square \rightarrow$ I	$12 + 6 = \square \rightarrow$ S
$7 + 13 = \square \rightarrow$ N	$8 + 11 = \square \rightarrow$ O		

Scratch space:

CLUE 2

Subtraction

The bot lost some fuel on the floor. Take away the spilled drops to see where they went.

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

T					T													
5	15	8	1	11	5	15	19	18	19	6	8	11	6	13	12	8	8	6

18	14	12	8	8	6

$12 - 7 = \square \rightarrow \boxed{\text{T}}$

$20 - 1 = \square \rightarrow \boxed{\text{A}}$

$18 - 6 = \square \rightarrow \boxed{\text{R}}$

$17 - 2 = \square \rightarrow \boxed{\text{H}}$

$7 - 1 = \square \rightarrow \boxed{\text{N}}$

$13 - 2 = \square \rightarrow \boxed{\text{O}}$

$18 - 5 = \square \rightarrow \boxed{\text{G}}$

$19 - 5 = \square \rightarrow \boxed{\text{C}}$

$19 - 1 = \square \rightarrow \boxed{\text{S}}$

$8 - 7 = \square \rightarrow \boxed{\text{B}}$

$13 - 5 = \square \rightarrow \boxed{\text{E}}$

Scratch space:

CLUE 3

Skip counting

Count the robot footprints by twos. It will lead us to a big clue.

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

M															
33	60	21	45	28	110	100	30	22	18	18	10	60	26	100	28

100	110	60	110	22	10

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

Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, __, 120, 130 → **T**

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 → **U**

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

Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, __, 65, 70 → **A**

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

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, __, 24, 27 → **G**

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

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, __, 12, 14 → **C**

Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, __, 30, 32 → **E**

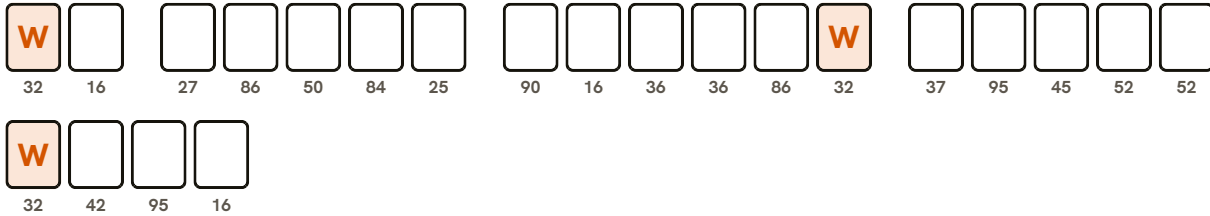
Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, __, 50, 55 → **N**

Scratch space:

CLUE 4 Place value

Look at these helper cards. Count the tens and ones blocks to read the next hint.

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



What number has 3 tens and 2 ones? → **W**

What number has 8 tens and 6 ones? → **O**

What number has 9 tens and 0 ones? → **Y**

What number has 2 tens and 5 ones? → **D**

What number has 5 tens and 0 ones? → **U**

What number has 1 ten and 6 ones? → **E**

What number has 3 tens and 7 ones? → **B**

What number has 2 tens and 7 ones? → **F**

What number has 4 tens and 5 ones? → **A**

What number has 4 tens and 2 ones? → **I**

What number has 8 tens and 4 ones? → **N**

What number has 9 tens and 5 ones? → **R**

What number has 3 tens and 6 ones? → **L**

What number has 5 tens and 2 ones? → **S**

Scratch space:

CLUE 5**Missing addends - the last clue**

We have six total gears but we only see four. Find the missing number to open the box.

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:

$10 + \underline{\quad} = 19$

$1 + \underline{\quad} = 8$

$1 + \underline{\quad} = 9$

$7 + \underline{\quad} = 8$

$5 + \underline{\quad} = 10$

$4 + \underline{\quad} = 8$

$6 + \underline{\quad} = 8$

$4 + \underline{\quad} = 16$

$2 + \underline{\quad} = 13$

$1 + \underline{\quad} = 11$

$3 + \underline{\quad} = 9$

Step 2 - cross out the sentence with each answer:

1. The villain sprayed sticky blue foam, then scanned the room for alarms.
2. The villain melted the steel lock, then charged up in the sunlight.
3. The villain used a strong magnet claw, then zoomed away into the sky.
4. The villain melted the steel lock, then zoomed away into the sky.
5. The villain melted the steel lock, then flashed a bright red light.
6. The villain cut the thick iron pipes, then scanned the room for alarms.
7. The villain cut the thick iron pipes, then zoomed away into the sky.
8. The villain drilled through the metal wall, then charged up in the sunlight.
9. The villain sprayed sticky blue foam, then zoomed away into the sky.
10. The villain cut the thick iron pipes, then charged up in the sunlight.
11. The villain used a strong magnet claw, then scanned the room for alarms.
12. The villain melted the steel lock, then scanned the room for alarms.

Answer Key

The Golden Gear Caper

Culprit: Robo

magnet claw · jet booster · neon green screen · yellow brass wire · static from magnets

Trail: Start 21 → Clue 1 19 → Clue 2 13 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE BOT DOES NOT HAVE A SIREN LIGHT"

$3 + 1 = 4$ (T) · $4 + 9 = 13$ (G) · $3 + 6 = 9$ (H) · $5 + 2 = 7$ (D) · $8 + 6 = 14$ (B) · $3 + 5 = 8$ (L) · $1 + 1 = 2$ (V) · $5 + 10 = 15$ (A) · $5 + 5 = 10$ (R) · $4 + 7 = 11$ (E) · $3 + 2 = 5$ (I) · $12 + 6 = 18$ (S) · $7 + 13 = 20$ (N) · $8 + 11 = 19$ (O)

Clue 2 (Subtraction): "THE BOT HAS A NEON GREEN SCREEN"

$12 - 7 = 5$ (T) · $20 - 1 = 19$ (A) · $18 - 6 = 12$ (R) · $17 - 2 = 15$ (H) · $7 - 1 = 6$ (N) · $13 - 2 = 11$ (O) · $18 - 5 = 13$ (G) · $19 - 5 = 14$ (C) · $19 - 1 = 18$ (S) · $8 - 7 = 1$ (B) · $13 - 5 = 8$ (E)

Clue 3 (Skip counting): "MAGNETS WILL CAUSE STATIC"

Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, __, 36, 39 = 33 (M) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, __, 120, 130 = 110 (T) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, __, 20, 22 = 18 (L) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, __, 28, 30 = 26 (U) · Skip-count by 10s. Fill the blank: 10, 20, 30, 40, 50, 60, 70, 80, 90, __, 110, 120 = 100 (S) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, __, 65, 70 = 60 (A) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, __, 24, 26 = 22 (I) · Skip-count by 3s. Fill the blank: 3, 6, 9, 12, 15, 18, __, 24, 27 = 21 (G) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, __, 35, 40 = 30 (W) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, __, 12, 14 = 10 (C) · Skip-count by 2s. Fill the blank: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, __, 30, 32 = 28 (E) · Skip-count by 5s. Fill the blank: 5, 10, 15, 20, 25, 30, 35, 40, __, 50, 55 = 45 (N)

Clue 4 (Place value): "WE FOUND YELLOW BRASS WIRE"

What number has 3 tens and 2 ones? = 32 (W) · What number has 8 tens and 6 ones? = 86 (O) · What number has 9 tens and 0 ones? = 90 (Y) · What number has 2 tens and 5 ones? = 25 (D) · What number has 5 tens and 0 ones? = 50 (U) · What number has 1 ten and 6 ones? = 16 (E) · What number has 3 tens and 7 ones? = 37 (B) · What number has 2 tens and 7 ones? = 27 (F) · What number has 4 tens and 5 ones? = 45 (A) · What number has 4 tens and 2 ones? = 42 (I) · What number has 8 tens and 4 ones? = 84 (N) · What number has 9 tens and 5 ones? = 95 (R) · What number has 3 tens and 6 ones? = 36 (L) · What number has 5 tens and 2 ones? = 52 (S)

Clue 5 (Missing addends): surviving statement is box 3 → Robo

$10 + \underline{\quad} = 19 = 9$ · $1 + \underline{\quad} = 8 = 7$ · $1 + \underline{\quad} = 9 = 8$ · $7 + \underline{\quad} = 8 = 1$ · $5 + \underline{\quad} = 10 = 5$ · $4 + \underline{\quad} = 8 = 4$ · $6 + \underline{\quad} = 8 = 2$ · $4 + \underline{\quad} = 16 = 12$ · $2 + \underline{\quad} = 13 = 11$ · $1 + \underline{\quad} = 11 = 10$ · $3 + \underline{\quad} = 9 = 6$