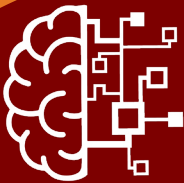


# KIDS' CHRISTMAS GAMES 2025

#2



## CoBRAIN

**The most beautiful time of the year is here!  
Enjoy festive games for all family!**

*Creative surprises for curious minds!*



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## Christmas Science Lab

Deep inside the North Pole, Santa's workshop is full of jingling bells, sparkling lights, and busy machines making toys for children around the world. But even magical machines can get tired! Their metal parts can scratch, rust, or lose their shine after years of hard work.

To help them stay strong, Santa's helpers use a special wintery process that works a bit like spraying Christmas snowflakes onto metal. These tiny warm sparkles land on the surface and create a shiny protective layer, like a cozy winter coat for the machines.

But choosing the perfect magical "coat" isn't easy. There are so many materials, and testing them one by one would take forever...

So Santa called for help from the smartest team he knows: CoBRAIN! CoBRAIN is like a group of super-clever Christmas elves who use Artificial Intelligence, shiny experiments, and computer magic to discover new super-strong materials in no time.

And that's not all! CoBRAIN is also creating a special magical tool, called the Sustainable Decision Support System, but you can think of it as Santa's "Wise Winter Guide."

This tool helps Santa and his elves choose the perfect materials by mixing together knowledge, science, and a little bit of Christmas sparkle.

Thanks to CoBRAIN's magic and science, Santa's workshop stays bright, safe, and ready for the holiday rush!



# 1

Crossword is a cool game to train your brain. Check the difficulty level and give it a try! Can you solve them all?

Look for the words on these directions: ↗ → ↓ ↘

DIFFICULTY ★☆☆☆☆

T	R	E	E	G	S
D	A	L	V	R	N
G	I	F	T	G	O
O	Y	U	N	L	W
C	O	A	T	A	S
F	V	U	R	B	Y

TREE | ELF | SNOW  
GIFT | COAT | LAB

DIFFICULTY ★★☆☆☆

F	S	L	E	I	G	H	G	S	C
D	R	E	I	N	D	E	E	R	U
S	G	S	C	O	A	N	J	I	G
P	C	M	E	T	A	L	A	Y	Q
R	I	E	R	K	X	Q	O	I	B
A	F	A	C	O	A	T	I	N	G
Y	E	R	J	Y	S	S	M	V	U
W	N	W	O	R	K	S	H	O	P
A	C	Z	Y	S	E	I	Z	V	O
D	E	R	A	Y	T	I	L	T	U

SLEIGH  
REINDEER  
WORKSHOP  
COATING  
FROST  
METAL  
SPRAY  
AI  
WEAR

DIFFICULTY ★★★★★☆

X	G	A	U	T	O	M	O	T	I	V	E	Y	W	P
C	A	N	D	Y	C	A	N	E	M	Y	D	E	H	R
H	S	F	F	K	Q	P	Z	L	S	E	U	A	Y	E
E	H	G	H	S	T	P	F	V	Y	S	M	R	E	S
M	U	S	A	A	G	J	B	E	U	R	T	Z	G	E
I	E	E	K	C	E	A	L	S	K	S	P	O	V	N
C	F	E	L	H	M	I	D	L	U	O	I	O	Q	T
A	R	T	V	I	T	E	H	D	I	F	P	N	Z	Z
L	V	R	U	X	S	U	N	B	D	N	O	R	T	H
Z	N	U	E	O	S	I	F	F	X	F	A	U	I	R
P	O	T	O	X	L	B	V	E	M	S	E	D	U	E
T	R	A	N	S	P	O	R	T	A	T	I	O	N	U
V	O	A	H	Z	A	O	P	A	S	N	E	L	O	G
E	W	Z	D	G	H	W	L	A	E	X	R	F	W	O
U	S	Q	Y	F	D	E	J	E	B	G	T	I	S	Q

PRESENT  
RUDOLF  
CANDYCANE  
TEXTILE  
AUTOMOTIVE  
CHEMICAL  
TRANSPORTATION  
INDUSTRY  
ELVES  
NORTH  
POLE



DIFFICULTY ★★★★★

EXPERT

O	R	N	A	M	E	N	T	R	D	G	C	D	S	V
W	D	G	K	R	V	B	R	M	H	K	O	I	D	F
O	H	R	E	A	M	E	T	A	L	S	A	T	E	Q
R	W	I	V	Y	R	E	Q	T	Y	R	T	H	C	S
K	Q	D	G	B	E	J	Y	E	X	N	I	E	I	N
S	Q	X	K	H	S	R	E	R	R	E	N	R	S	O
H	W	B	V	Q	E	E	W	I	B	N	G	M	I	W
O	S	Z	V	N	A	N	R	A	L	N	S	A	O	F
P	U	I	Q	Z	R	I	T	L	S	W	E	L	N	L
H	K	M	V	R	C	U	O	R	B	D	S	S	T	A
C	N	R	U	S	H	W	U	K	O	G	I	P	O	K
Q	G	M	O	P	E	F	T	K	I	P	W	R	O	E
S	U	S	T	A	I	N	A	B	L	E	Y	A	L	Q
V	J	L	O	W	Q	B	M	U	O	E	Q	Y	C	B
W	T	J	Y	E	V	K	P	Y	I	E	S	E	I	E

HIGHENTROPY  
DECISIONTOOL  
THERMALSPRAY  
SHOP  
MATERIAL  
SUSTAINABLE  
COATINGS  
RESEARCH  
SNOWFLAKE  
ORNAMENT  
METALS



## BRAINER

Found the given words  
but not all.

You know how to search  
and find solutions.  
Keep training your skills  
to get your best-self.

## BRAINIOUS

Found all the given  
words at least in 2  
crosswords.

You can find everything  
and you're capable  
to solve even strange  
tasks. Keep expanding  
your skills.

## BRAINIAC

Found all the given  
words easily.

You're an expert in  
solving problems  
and a great explorer!  
You're one step away  
to master CoBRAIN's  
function.

## 2

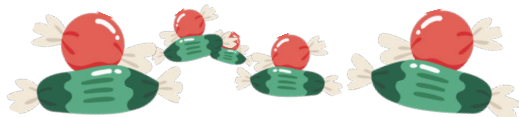
Match the following objects with their coating options, and the words with the meaning that it has more sense.



VISUAL	NAME
	Santa
	Machine
	Lab
	Tree
	Gift
	Star

WORD	MEANING
COATING	A process that sprays heated particles to create strong coatings.
THERMAL SPRAY	Where elves, and scientists, build, test, and fix things.
AI (ARTIFICIAL INTELLIGENCE)	A protective layer for metal surfaces, like a winter jacket.
WEAR	Santa's snow-gliding vehicle that needs protection from wear!
SLEIGH	A smart computer helper that learns from data.
WORKSHOP	When surfaces slowly get damaged after lots of use.

WORD	MEANING
SANTA'S SLEIGH RUNNERS	Represents metalworking and material testing.
GIFT-SORTING MACHINE	Heats materials, similar to thermal spraying.
ELF METAL CUTTER	Need wear-resistant coatings to glide smoothly.
NORTH POLE FURNACE	Like CoBRAIN's SDSS tool analyzing many choices.
REINDEER STABLE CLIPS	Works like AI, choosing the best option quickly.
SNOWFLAKE ANALYZER	Metal connectors requiring corrosion protection.



## 3

Decode the secret words using the letter-number key

(A=1, B=2, C=3, D=4, E=5, F=6, G=7, H=8, I=9, J=10, K=11, L=12, M=13, N=14, O=15, P=16, Q=17, R=18, S=19, T=20, U=21, V=22, W=23, X=24, Y=25, Z=26).



A. 13-5-18-18-25 3-8-18-9-19-20-13-1-19

B. 23-9-14-20-5-18 19-3-9-5-14-3-5

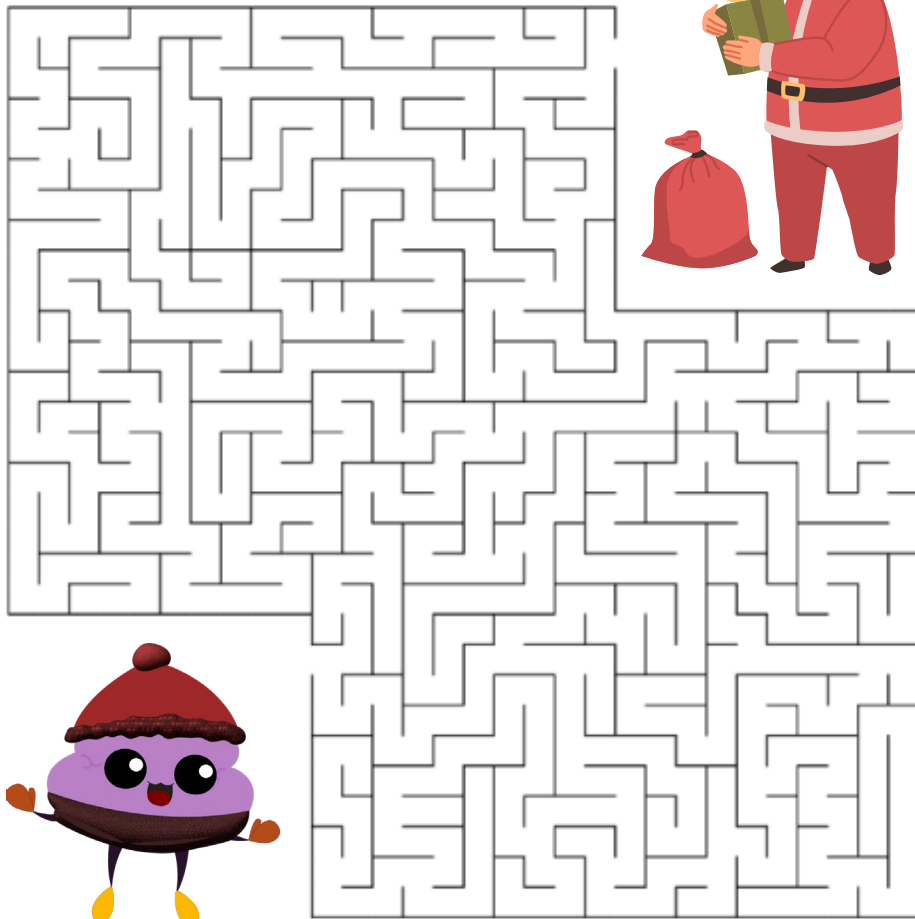
C. 3-15-2-18-1-9-14 13-1-7-9-3

D. 6-18-15-19-20 16-18-15-20-5-3-20-9-15-14



## 4

It's time for Santa to deliver the presents but he needs Brainico's help for this. Brainico was playing far away and he lost the way. Lets help him with this maze.



## 5

Sudoku is a fun puzzle game where you use your brain like a little detective!



- 1) Look the grid and try to fill the empty boxes with numbers (1-9).
- 2) Each row, column and box must have all numbers once.
- 3) No double numbers in box, column or row.



3	4	5						8
6	1			8	3	5	4	9
7	9			4	5			6
			1	5	7			
				6	4	9		
	7	1	9			4		
		9		2	6		4	
	5			1				
2	6					3		

	3			8				4
5					4			3
		7	6		3			
	2			9		1		4
9			4	2		3		
6	8		3					
2	4	3		7	8			
8	1	5		6	2			7
		9	1	4	8	6	5	

				4	8			3
2				7				5
6							4	1
			4		6	5	1	
								8
1		4			3	7		
			5	8				
	8						9	2
9	1		3					5

5			2					9
		8	1	3				2
	6		9		5			
	4							1
	1	6					4	5
		9	4					
6				4	3			
9	3				6	8		2

# 6

Time to make a choice! Can you answer the following questions? Choose the right answer for them!



- 1) **Why do reindeer need strong sleigh runners?**
  - A. For ice-skating contests
  - B. Because they get hungry
  - C. To help the sleigh glide without wear
  - D. To make cool sounds
- 2) **Why do Santa's sleigh runners need special protection?**
  - A. Because they get cold toes
  - B. Because they love fashion
  - C. So they don't wear out on long snowy flights
  - D. So the reindeer can sleep on them
- 3) **What does snow do when it lands on metal?**
  - A. Starts dancing
  - B. Melts and may cause corrosion
  - C. Turns into candy
  - D. Becomes a pet
- 4) **What does a coating do on a metal surface?**
  - A. Gives it superpowers
  - B. Protects it from damage like a winter jacket
  - C. Makes it taste like candy
  - D. Turns it into a reindeer
- 5) **What does AI help scientists do during winter?**
  - A. Predict snowfall on Santa
  - B. Find better materials faster
  - C. Wrap presents
  - D. Bake cookies
- 6) **What helps scientists find the best materials faster?**
  - A. A singing snowman
  - B. Santa's cookie list
  - C. Artificial Intelligence (AI)
  - D. A magic scarf



- 7) **What is a coating similar to?**
  - A. A Christmas sweater for metal
  - B. A singing ornament
  - C. A noisy cookie
  - D. A flying tree
- 8) **What happens if machines don't have good coatings?**
  - A. They turn into Christmas trees
  - B. They might wear out and break
  - C. They start singing carols
  - D. They melt like snowflakes
- 9) **What is thermal spraying MOST like?**
  - A. Painting with warm sparkles
  - B. Throwing snowballs at machines
  - C. Baking cookies with glitter
  - D. Feeding carrots to reindeer
- 10) **Why does Santa love high-entropy metals?**
  - A. They stay strong even in cold weather
  - B. They glow bright red
  - C. They tell jokes
  - D. They smell like cinnamon
- 11) **What helps CoBRAIN work faster than trial-and-error?**
  - A. Fast reindeer
  - B. AI and smart models
  - C. Flying ornaments
  - D. Hot cocoa machines
- 12) **What would Santa protect with a coating?**
  - A. His beard
  - B. His sleigh and workshop machines
  - C. His cookies
  - D. His hat



# 7

I think I need some colour! Take your time and paint and decorate the Christmas scene. Lets be creative!



Read the riddles and try to solve them. Can you guess them? If you can't, try to solve the mixed letters and get the correct answers!



## Let's see the Christmas Riddles

"I fly with Santa through the snow, And shiny coatings help me go. I jingle, sparkle, glide all night, Who am I?"

**THE ANSWER IS...**

STASNA' HLIGSE

"I'm like a warm winter coat for metal parts, I stop the cold from breaking hearts. Elves use me, scientists too. What am I that helps machines stay new?"

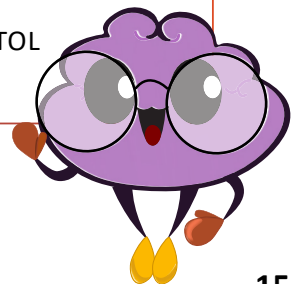
**THE ANSWER IS...**

A NATOGCI

"I mix knowledge, models, and real tests too, To guide decisions that engineers must do. At Santa's workshop, I choose what's best! What tool am I that helps science pass the test?"

**THE ANSWER IS...**

SANISUTLABE DOSEICIN PRUPTOS MESTYS OTOL



## THE NIGHT THE SLEIGH NEEDED SAVING

Deep in the North Pole, the snowflakes were swirling like silver confetti, and Santa's workshop glowed with warm golden lights. Elves hurried around with jingling bells on their shoes, checking toy lists, polishing ornaments, and feeding the reindeer extra carrots for energy. But inside Santa's Mechanical Workshop, a place filled with gears, tools, lights, and strange humming machines, something was terribly wrong.

Santa's sleigh... was not working! Its metal runners were scratched. Its sides were worn from last year's storms. And worst of all, the cold winter air made the metal creak like an old snow-covered tree.

"We're in trouble," whispered Tika, the chief elf engineer. "If we don't fix the sleigh, Santa can't fly!"

The elves tried everything they knew: polishing, hammering, scrubbing, even sprinkling "extra magic dust" ...but nothing worked. That's when Santa clapped his hands and said: "Call the CoBRAIN team."

Within minutes, Brainico, the tiny glowing mascot of CoBRAIN, zoomed in on a hover-sparkle board, followed by elf-scientists carrying laptops, measuring tools, and cups of very hot cocoa. Tika explained the problem, showing the scratches and worn-out parts. BRAINico nodded.

"This isn't just a repair job. This is a materials challenge." He tapped on a crystal tablet connected to CoBRAIN's magical-but-scientific system.

Suddenly, holograms filled the workshop: snowflake-like microstructures of metals, models of sleigh runners, wear patterns, possible coating combinations, Christmas-energy simulations (only at the North Pole!) The AI inside the system glowed bright blue.



"Searching for optimal solution..."

After a moment — **DING!**

A holographic message appeared:

**Recommended Material: High-Entropy Coating – FrostGuard Mix**

**Why?**

- extremely strong
- works perfectly in icy conditions
- protects from wear
- eco-friendly
- Santa-approved



The Sustainable Decision Support System (SDSS) had spoken.  
 The elves rushed into action.  
 Tiny nozzles sprayed a warm, shimmering layer over the sleigh's runners,  
 just like a winter coat of stardust and science.  
 The metal transformed.  
 It gleamed with a silver-blue shine and felt stronger than ever before.  
 Santa gave the sleigh a gentle push.

It glided across the snow as smoothly as a reindeer in midair.  
 Tika cheered.  
 BRAINico glowed.  
 Even the reindeer danced.

“CoBRAIN,” Santa said, stroking his beard, “you’ve saved Christmas!”

And that night, as Santa soared across the sky delivering gifts to the world,  
 the sleigh sparkled with a brand-new protective coating, one made by  
 science, teamwork, and a bit of holiday magic.

**MORAL:**

CoBRAIN shows that when data, experiments, AI, and people work  
 together, we can find smarter, safer, and greener materials. And just like in  
 Santa’s workshop, even Christmas magic needs science to shine!



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**ANSWERS**



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