

Isotope BINGO!

(board made from Chart of the Nuclides)

P Proton number (Elements)	8	O 12 $<0.001s$ 2 protons	O 13 $0.009s$	O 14 $70.5s$	O 15 $0.122s$	O 16 99.758%	Oxygen
	7	N 11 $<0.001s$	N 12 $0.011s$	N 13 $9.97m$	N 14 99.63%	N 15 0.37%	Nitrogen
	6	C 10 $19.3s$	C 11 $20.3m$	C 12 98.8% FREE SPACE	C 13 1.11%	C 14 $5730y$	Carbon
	5	B 9 $<0.001s$	B 10 20%	B 11 80%	B 12 $0.020s$	B 13 $0.017s$	Boron
	4	Be 8 $<0.001s$	Be 9 100%	Be 10 $>1 \text{ million years}$	Be 11 $13.8s$	Be 12 $0.011s$	Beryllium
		4	5	6	7	8	

N Neutron number (Isotopes)

DO NOT WRITE ON THIS CARD

Rules: the bingo master will call out an isotope of a certain kind. Use the Chart/Game board above and instructions to the right to **pick one** that works and build it with your marbles (if requested). **Mark it** with a small piece of paper numbered in the order that clue was called (First clue = "1", etc.) Get **five in a row** and yell "BINGO" to win!

LEGEND

Box color/shape indicates

how the isotope *decays* (comes apart):

Black square = **stable**, won't decay

Pink diamond = **unstable**, beta-plus decay

Blue circle = **unstable**, beta-minus decay

Yellow triangle = **unstable**, proton decay

Green checker = **unstable**, alpha decay

"Half-Life": the time period in which a radioactive nucleus has a 50% chance of decaying (only for **unstable** isotopes, boxes with colored shapes)
 s = seconds m = minutes d = days y = years

Isotope name:
 Element Mass Number

O 15 $0.122s$	O 16 99.758%
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Abundance: percent of element found on Earth that will be this isotope (only for **stable** isotopes, black boxes)