Science Fables

The Atom's Family Tree

Story Quiz

This quiz checks what you learned about atomic number, mass number, and isotopes.

1. What does the atomic number of an element tell us?

A. The number of neutrons
B. The number of protons
C. The mass number
D. The average atomic mass

2. How is the mass number of an atom calculated?

A. Protons + Neutrons
B. Protons + Electrons
C. Neutrons − Protons
D. Electrons + Neutrons

3. An atom has 8 protons and 9 neutrons. What is its mass number?

A. 8
B. 9
C. 17
D. 18

4. What are isotopes?

A. Atoms of different elements with the same number of neutrons
B. Atoms of the same element with different numbers of protons
C. Atoms of the same element with different numbers of neutrons
D. Atoms with no neutrons

5. Why is chlorine's average atomic mass about 35.5 instead of a whole number?

A. Chlorine has different isotopes with different masses and natural abundances
B. Chlorine has 35.5 protons
C. Chlorine has the same number of protons and neutrons
D. Chlorine's mass number changes every day

Answer Key

1. B — The number of protons

Atomic number tells us the number of protons in an atom’s nucleus.

2. A — Protons + Neutrons

Mass number is the total number of protons and neutrons in the nucleus.

3. C — 17

Mass number = protons + neutrons = 8 + 9 = 17.

4. C — Atoms of the same element with different numbers of neutrons

Isotopes are atoms of the same element with different numbers of neutrons.

5. A — Chlorine has different isotopes with different masses and natural abundances

Average atomic mass reflects chlorine’s isotopes and their natural abundances, so it is not a whole number.