

Physics Doodle Notes

NUCLEAR PHYSICS

The Perfect Mix
of Science & Art



- ACTIVATES WHOLE BRAIN
- INCREASES RETENTION
- IMPROVES FOCUS
- REDUCES STRESS
- ENGAGES STUDENTS

Mrs. Brosseau's Binder

Puzzles

Review

Lessons

Units

Resources

Credits & Copyright



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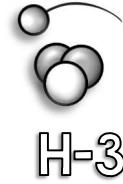
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#physicsdoodlenotes



Isotopes

definition



OF PROTONS = ATOMIC NUMBER

OF NEUTRONS = ATOMIC MASS - ATOMIC NUMBER

OF ELECTRONS = # OF PROTONS

practice

Ar-38

ARGON-38

PROTONS
NEUTRONS
ELECTRONS

Ti-44

TITANIUM-44

PROTONS
NEUTRONS
ELECTRONS

Co-56

COBALT-56

PROTONS
NEUTRONS
ELECTRONS

Just so we're clear...

• ELEMENTS •

are defined by
the number of

PROTONS

• IONS •

are defined by
the number of

ELECTRONS

• ISOTOPES •

are defined by
the number of

NEUTRONS

IDENTIFY 3 ISOTOPES OF ELEMENTS THAT HAVE
THE SAME NUMBER OF NEUTRONS AS CARBON-14.

He-5

challenge

Isotopes:

definition

Atoms of the same element that have a different atomic mass.

The number of protons determines the element, but atomic mass includes protons and neutrons. Heavier and lighter atoms exist due to more or less neutrons.

H-1

H-2

H-3

- # OF PROTONS = ATOMIC NUMBER
- # OF NEUTRONS = ATOMIC MASS - ATOMIC NUMBER
- # OF ELECTRONS = # OF PROTONS

*use the given atomic mass,
NOT the mass on the PTOE!

practice

Ar-38

18 PROTONS

20 NEUTRONS

ARGON-38

18 ELECTRONS

Ti-44

22 PROTONS

22 NEUTRONS

TITANIUM-44

22 ELECTRONS

Co-56

27 PROTONS

29 NEUTRONS

COBALT-56

27 ELECTRONS

Just so we're clear...

• ELEMENTS •

are defined by
the number of

PROTONS

• IONS •

are defined by
the number of

ELECTRONS

• ISOTOPES •

are defined by
the number of

NEUTRONS

IDENTIFY 3 ISOTOPES OF ELEMENTS THAT HAVE THE SAME NUMBER OF NEUTRONS AS CARBON-14.

C-14 has 8 neutrons:

N-15 B-13 Li-11

O-16 Be-12

F-17

challenge