

Main Idea

- Atom

- nucleus

- Isotopes

- Electrons

Details

- Smallest particle of a chemical but not chemicals themselves

(wheel doesn't make up a car)

• parts of elements

- Center of atom

• contains # of protons

• contains # of neutrons

• # of neutrons + # of protons =

Atomic
mass

- atoms with different
number of neutrons

- small negatively charged particles surrounding the nucleus

• # of protons = # of electrons

• located in an orbital

• Adding or removing an electron results in a charged particle called an ion

Types of Radioactivity

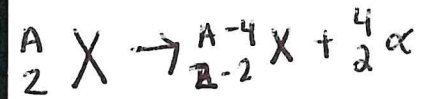
Type

Alpha decay

What Happens

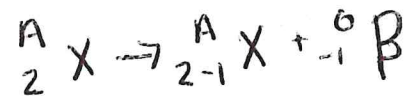
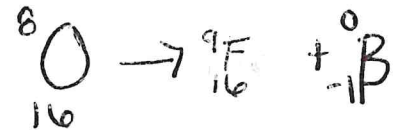
nucleus releases an alpha particle (a helium-4 nucleus) consisting of two neutrons & two protons

Results



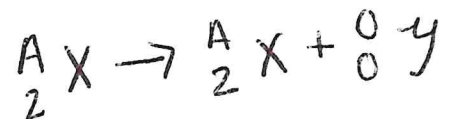
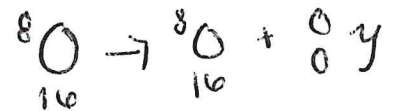
Beta Decay

nucleus ejects an electron



Gamma Decay

the protons and neutrons within the nucleus rearrange into a more stable form; energy is emitted



Type

What Happens

Results

Non-ionizing radiation

the low-energy parts
of the electromagnetic
spectrum

radiowaves
infrared waves
ultraviolet waves

Ionizing Radiation

radiation that can
remove an electron
from its orbital

X-Rays
Gamma Rays
Particle radiation: alpha
+
beta

Neutrons

free neutron particles
that can collide with
other atoms.