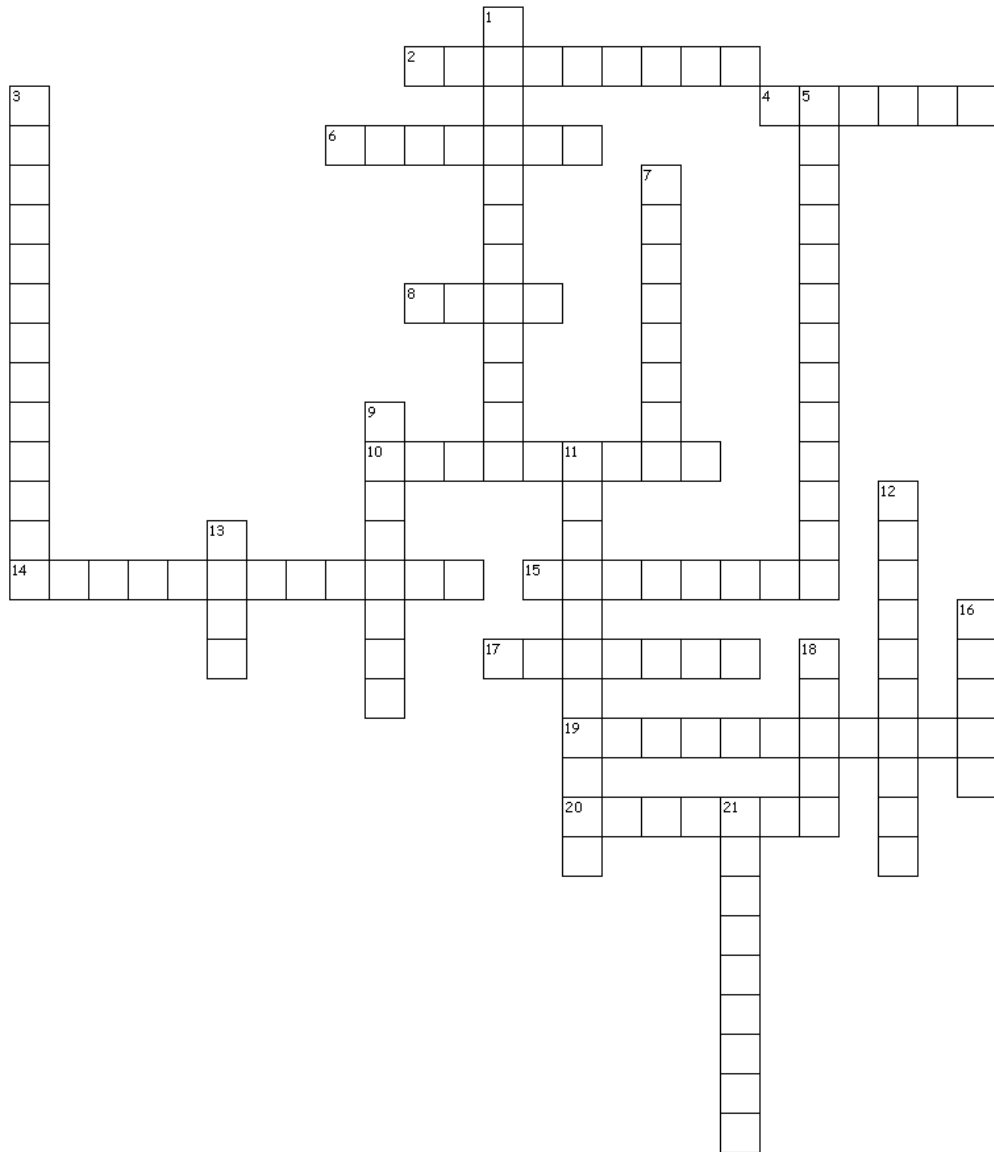


Nuclear Science



- | | | |
|----------------|------------------|---------------|
| Accelerator | Word Bank | Quark |
| Alpha Particle | Fission | Radioactivity |
| Atom | Gamma ray | Radiation |
| Boron | Ionization | Radioisotope |
| Decay chains | Isotopes | Shielding |
| Electron | Proton | Stability |
| Electroscope | Neutron | X-ray |
| | Nucleus | |

Across

2. When the nucleus of an atom does not spontaneously emit any kind of radiation; the opposite of radioactive.
4. A positively charged particle found in the nucleus of an atom that determines an element's chemical properties.
6. The splitting of atoms when an atom's nucleus is bombarded by neutrons which results in the release of large amounts of energy.
8. The smallest particle of an element having the chemical properties of that elements.
10. Material that blocks radiation, protecting people and equipment from radiation damage.
14. A simple instrument that is used to detect the presence and magnitude of electric charge on a body such as static electricity.
15. Ionizing, electromagnetic radiation of high energy and short wavelength.
17. The core of the atom made up of positively charged protons and neutral neutrons (except Hydrogen, which has only one proton and no neutrons).
19. An apparatus for propelling subatomic particles to high velocities by means of electric or electromagnetic fields. The particles are generally made to collide with other particles, either as a research technique or for the generation of high-energy X-rays and gamma rays.
20. An uncharged particle found in the nucleus of every atom except hydrogen.

Down

1. Atoms that contain an unstable combination of neutrons and protons.
3. Ionizing, electromagnetic radiation of low energy and long half-life.
5. Process by which the nucleus of an unstable atom loses energy by emitting radiation, including alpha particles, beta particles, gamma rays, and conversion electrons.
7. A negatively charged particle that orbits the nucleus of an atom.
9. Atoms with the same number of protons, but differing numbers of neutrons.
11. Radioactive decay of different discrete radioactive products as a series of transformations.
12. Process by which an atom or a molecule acquires a negative or positive charge by gaining or losing electrons to form ions.
13. A form of electromagnetic radiation produced when electrons strike a target or when electrons are rearranged within an atom.
16. An elementary particle and a fundamental constituent of matter.
18. A chemical element that absorbs neutrons, thus controlling or stopping completely a nuclear chain reaction.
21. The release of particles or energy from an atom.