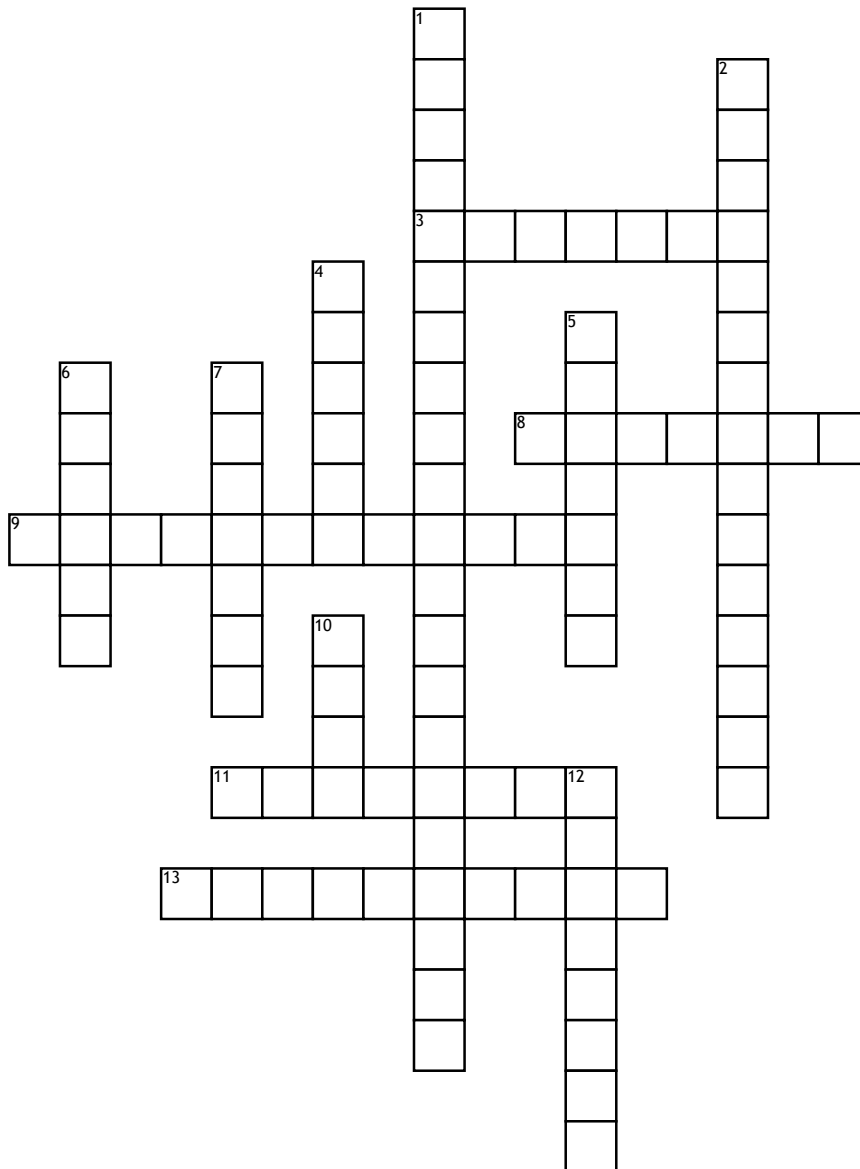


# Physical Science



## Across

- 3.** each of two or more forms of the same element that contain equal numbers of protons in their nuclei, and hence differ in relative atomic mass but not in chemical properties; in particular, a radioactive form of an element.
- 8.** the central and most important part of an object, movement, or group, forming the basis for its activity and growth.
- 9.** the number of protons in the nucleus of an atom, which determines the chemical properties of an element and its place in the periodic table.
- 11.** . the continuous physical force exerted on or against an object by something in contact with it.

- 13.** the total number of protons and neutrons in a nucleus.

## Down

- 1.** molecular scale
- 2.** is associated with an atom, and that can participate in the formation of a chemical bond if the outer shell is not closed
- 4.** is a discrete packet of energy associated with electromagnetic radiation (light).
- 5.** a subatomic particle of about the same mass as a proton but without an electric charge, present in all atomic nuclei except those of ordinary hydrogen.

- 6.** a stable subatomic particle occurring in all atomic nuclei, with a positive electric charge equal in magnitude to that of an electron, but of opposite sign.
- 7.** each of the actual or potential patterns of electron density that may be formed in an atom or molecule by one or more electrons, and that can be represented as a wave function.
- 10.** The mass of substance containing the same number of fundamental units as there are atoms in exactly 12.000 g of  $^{12}\text{C}$ .
- 12.** a stable subatomic particle with a charge of negative electricity, found in all atoms and acting as the primary carrier of electricity in solids.