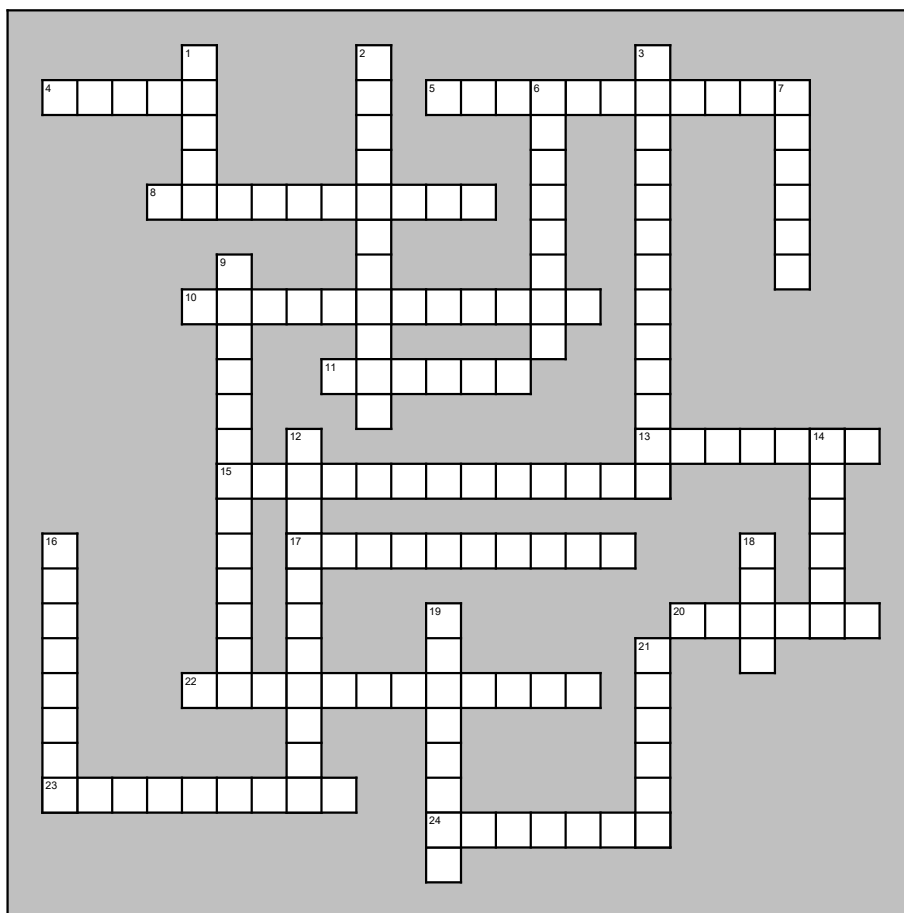


# Crossword



## Across

- A particle ejected by certain radioactive elements. The nucleus of a helium atom.
- Hydrocarbons that possess at least one double covalent bond (alkenes) or triple covalent bond (alkynes) between the carbon atoms.
- Radiation that occurs naturally in the environment. Radioisotopes in rocks, air, water, plants and animals contribute to it.
- All the atoms are linked by covalent bonds. Described as a single molecule in which atoms are linked to several other atoms in a lattice. e.g. diamond.
- Coal, natural gas and petroleum are common \_\_\_ fuels, made from former living organisms compressed under high temperature. Used for combustion reactions.
- Molecules that contain both carbon and hydrogen elements.
- Neutrons released during fission triggers a series of nuclear fissions.
- Combustion lacking enough oxygen to react with all the fuel. Carbon monoxide is produced along with carbon dioxide and water.
- Organic molecules that combine a carboxylic acid and hydroxyl functional groups to the form the molecule. Found in food tastes and smells (banana, strawberry, grape, wintergreen).
- The smallest possible mass of fissionable material that can sustain a chain reaction (fission).
- Hydrocarbons that have only single covalent bonds between the carbon atoms. Methane, propane, butane (alkanes) are examples.
- A nuclear reaction where the nucleus of a heavy atom, such as Uranium-235, is split into two main parts, accompanied by the release of much energy.

## Down

- High-frequency electromagnetic radiation emitted by the nuclei or radioactive elements. No charge or mass. Penetrates materials more than alpha or beta particles.
- An organic molecule made up exclusively of hydrogen and carbon atoms. Alkanes, alkenes and alkynes are examples.
- The conversion of an atomic nucleus of one element into an atomic nucleus of another element through a loss or gain in the number of protons. Nuclear change, not chemical.
- Hydrocarbons that contain ring structures. e.g. benzene.
- Many radioactive isotopes are used to determine the age of various substances, comparing present levels with levels in fossils.
- Devices that are used to detect nuclear radiation. Film badges also detect radiation levels and monitor exposure.
- Unstable atomic nuclei that emit charged particles and energy. All elements having an atomic number greater than 82 are said to be \_\_\_\_\_. These elements have unstable nuclei.
- "Like units." When two or more organic molecules have the same molecular formula but different structural formulas. i.e. glucose, fructose, galactose are all C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>.
- Organic molecules containing the OH functional group. i.e. methanol, ethanol.
- An electron (or positron) emitted during the radioactive decay of unstable nuclei.
- The time required for half the atoms in a sample of a radioactive isotope to decay.
- A nuclear reaction where nuclei from lighter atoms combine to form heavier nuclei, releasing large amounts of energy.