

U-Pick Projects: Chemistry

Name _____

Directions: Pick projects that will earn you a minimum of 10 points. Shade in the boxes to show the projects you complete. You may create electronic versions that can be shared with your teacher or complete them with materials you have available at home. You may choose up to 2 more to earn extra credit equal to the number of points the boxes are worth.

1 pt	Research an element to create a postcard about its history, properties, and uses.	Create a display of physical and chemical properties with at least 3 examples for each.	Create a set of flashcards for 5 vocabulary terms from the Chemistry unit. Each flashcard needs the term listed on the front and a picture clue. Write the definition on the back.
2 pts	Make a list of 10 chemical reactions you observe in one day.	Pick 5 substances in your home list the ingredients for each. Identify the elements in the chemical compounds listed.	Develop a matching game using at least 10 elements and their chemical symbols.
3 pts	Identify substances that are mixtures and compounds in your home. Create a display to show how the substances are classified. You will need at least 5 examples for each.	Create a comic strip or cartoon to teach younger students about chemical bonds.	Create a crossword puzzle using at least 15 terms from the Chemistry unit vocabulary. You must provide the clues and an answer key.
4 pts	Create a booklet to teach your family about the different classes of elements: metals, nonmetals, and metalloids.	Find a recent article in the news related to chemistry. Explain how this article is related to your everyday world. Answer must be at least 100 words.	Create 5 questions using the Chemistry unit vocabulary that your teacher could add to a quiz or test. Each question must have 4 answer choices with the correct one identified.

Total Points Earned = _____

Chemical Interactions Vocabulary – Also available on [Quizlet](#)

- Alloy - A mixture of two or more metals
- Anion - An atom that has gained an electron and has a negative charge
- Atom - Smallest part of an element; made up of protons, neutrons, and electrons
- Atomic Mass - Total number of protons and neutrons in an atom
- Atomic Number - Number of protons or electrons in an atom
- Bohr Diagram - Shows the local of ALL the electrons in an atom; resembles a "bull's-eye" with the different energy levels
- Cation - An atom that has lost an electron and has a positive charge
- Chemical Equation - Represents a chemical reaction using chemical formulas and coefficients
- Chemical Formula - Represents a chemical compound (with symbols and subscripts)
- Chemical Symbols - Letter or letters that are used to represent the elements
- Coefficient - A number in front of a chemical formula in an equation that indicates how many molecules or atoms of each reactant and product are involved in a reaction.
- Colloid - A mixture made up of a liquid and particles that remain suspended rather than dissolved in that liquid.
- Compound - Pure substance made of two or more elements that are chemical combined
- Conservation of Mass - Law that states the total mass of the reactants must equal the total mass of the products
- Covalent Bond - Bond between two elements that share electrons
- Crystal - A solid in which the atoms are arranged in a pattern that repeats again and again
- Electron - Subatomic particle with a negative charge; found in energy levels around the nucleus
- Energy Level - Areas around the nucleus that contains electrons; 1st can hold 2, 2nd can hold 8, and the 3rd can hold 18
- Family - Groups or columns of elements in the periodic table with similar properties
- Heterogeneous - Type of mixture in which the individual components are visible
- Homogeneous - Type of mixture that appears the same throughout
- Ion - An atom that has lost or gained an electron
- Ionic Bond - Bond between two ions that results from a transfer of electrons
- Isotope - Atoms of the same element with different numbers of neutrons
- Lewis Structure - Diagram that show the number of VALENCE electrons in an atom; includes the chemical symbol with dots as valence electrons
- Matter - Anything that has mass and volume
- Metal - Elements found on the left-hand side of the periodic table, such as Na, Mg, and Au
- Metalloids - Elements located along the zig-zag that have properties of metals and nonmetals
- Mixture - Two or more substances mixed together, but are not chemically combined
- Molecule - A group of atoms held together by covalent bonds.
- Monomers - Molecules that are linked together to make polymers
- Neutron - Subatomic particle with no charge; found in the nucleus
- Nonmetals - Elements found on the right-hand side of the periodic table, such as H, O, and Cl
- Nucleus - Center of the atom
- Oxidation Number - The number of electrons an atom may gain or lose; also known as it's "charge"
- Periodic Table - Chart that shows the elements arranged in families and periods based on their properties and structure
- Petrochemicals - Chemicals that are made from petroleum; used to make slime and plastics
- Polymers - Created by linking monomers together to make a chain; proteins, DNA, and slime
- Products - Substances that are produced by a chemical reaction
- Proton - Subatomic particle with a positive charge; found in the nucleus
- Quark - Particles that make up protons and neutrons
- Reactants - Substances that enter into a chemical reaction
- Reaction Rate - The speed at which a chemical reaction takes place
- Solute - Substance that is dissolved in a solution
- Solution - Homogeneous mixture in which one substance is dissolved in another
- Solvent - Substance that does the dissolving in a solution
- Subscript - Number that shows the number of atoms of each element in a compound
- Suspension - A mixture in which particles can be seen and easily separated by settling or filtration
- Valence - Electrons in the outermost energy level