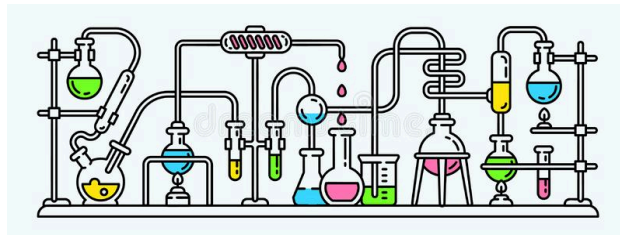


VAMPY Chemistry Summer 2026

Instructor: Trevor Webster

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Teaching Assistant: Stockton Brown

Students in this course will take an in-depth look into matter and energy. Each day students will be engaged in lessons that will develop their chemical content knowledge, critical thinking abilities, and problem solving skills. By the end of the course, successful students will be able to demonstrate a basic understanding of the structure and properties of chemical systems using the practices of the discipline including: developing and using models; analyzing and interpreting data; using mathematics and computational thinking; designing and conducting experiments; obtaining, evaluating and communicating information; and more. Through participation in course activities students will gain experience in the cross-cutting concepts of cause and effect, patterns, structure and function, stability and change, and scale, proportion and quantity. Students will participate in at least one laboratory activity daily, along with engaging demonstrations that develop interest and curiosity about the content. (They will be expected to adhere to the safety rules set forth on the first day of class.) Throughout the class, students will also have problem-solving opportunities as they develop a deep understanding of chemistry content.

Topics Covered:

Introduction to Matter and Energy	Covalent Bonding & Nomenclature
States of Matter	Acid Nomenclature
Chemical and Physical Changes	Organic Nomenclature
Density	Chemical Reactions & Balancing Equations
Kinetic-Molecular Theory	Predicting Products in Reactions
Atomic Structure	Acid-Base Neutralization Reactions
Isotopes and their Formation in Star Life Cycle	Reaction Rates
Stability & Radioactivity	Thermochemistry
Nuclear Changes	The Mole as a Counting Unit
Periodic Table Arrangement	Stoichiometry
Electromagnetic Radiation	Gas Laws
Periodic Trends (Valence Electrons, EN)	Chemistry of Photography
Ionic Bonding & Nomenclature	Chemistry of Paint

The class will include practice in class as well as night-class homework and readings. Periodically students will be assessed which will provide information for the evaluation at the end of the course.