

## Chemistry Standards

**BOLD = New headings based on Next Gen Language**

**INDENTED = shows the Standards to be assessed**

### Science, Engineering and Technology on Society and the Natural World

**Science and Technology**--Students will understand the history and nature of scientific knowledge and technology, the processes of inquiry and technological design, and the impacts science and technology have on society and the environment.

### Structure and Properties of Matter

**Atomic Structure**--Describe the structure of atoms in terms of neutrons, protons, and electrons and the role of the atomic structure in determining chemical properties.

**Gas**--Explain atmospheric chemistry and the impacts of various inputs (carbon dioxide, methane, sulfur, etc.) into the atmosphere. Describe the relationship between volume, temperature, and pressure in terms of the actions of atoms, molecules, and ions.

### Science and Engineering Practices

**Fundamental Skills I, II, III (not recursive, specific to each Trimester)**--Demonstrate the fundamental skills of chemistry, including metric conversions, scientific notation, significant figures, density, physical/chemical properties and changes, lab equipment identification and usage, element names and symbols.

**Processes of Science**--Students will be able to: ask questions and define problems, develop and use models, plan and carry out investigations, analyze and interpret data, use mathematics, information and computer technology, and computational thinking, construct explanations and design solutions, engage in argument from evidence, and obtain, evaluate and communicate information.

### Chemical Reactions

**Bonding**--Describe how the number and arrangement of atoms in a molecule determines a molecule's properties, including the types of bonds it makes with other molecules and its mass, and apply this to predictions about chemical reactions.

**Reactions**--Describe factors that affect the rate of chemical reactions (concentration, pressure, temperature, catalysts) and make predictions about chemical reactions based on these factors.

**Energy**--Explain the relationship between kinetic and potential energy and apply the knowledge to solve problems. Describe nuclear energy and its impacts.

### (Waves and) Electromagnetic Radiation

Some covered 1<sup>st</sup> tri in "The Air Up There"--spectrum, UV light as related to ozone, some covered in 3<sup>rd</sup> tri with nuclear energy/chemistry

H.O.W. focus areas, "The Big 3":

- I am an active participant (**classwork**).
- I meet deadlines and established criteria (**homework**).
- I consistently complete my homework (**homework**).

**These areas will be assessed and reported out on approximately every two weeks.**