

Standards-Based Unit of Study

1. Overview

Teachers(s) Tina Cornelius

Subject(s)/Course(s): Science Grade/Level: 8th

Unit Topic/Focus: Elements, compounds and mixtures and their properties

Unit Organizer: Where in my life does Chemistry really matter?"

Integration with other content areas (if applicable): Language Arts, Math, Health, Geography (working with students from other countries)

Estimated time for implementation: 2- 3 weeks

Connections to previous/future learning: Students will gain a general idea of what the Periodic table of Elements is and how the arrangement of the table relates to specific properties and trends. Students can connect the elements on the table to real life applications and uses within their daily lives. Students will start to look at events and items in their daily lives and evaluate chemical connections to elements and compounds. Students will be able to make connections to future endeavors that require knowledge of these concepts at a higher level.

2. Standards (see Combined Curriculum Documents and others):

Academic Expectations

Academic Expectation 2.1

Students understand scientific ways of thinking and working and use those methods to solve real-life problems.

Academic Expectation 2.2

Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.

Academic Expectation 2.3

Students identify and analyze systems and the ways their components work together or affect each other.

Academic Expectation 2.4

Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and

Program of Studies

SC-8-STM-U-1
Students will understand that all matter is made of tiny moving particles called atoms, which are far too small to see directly through a microscope. The atoms of any element are alike but are different from atoms of other elements.

SC-8-STM-S-2
Students will analyze models/representations of elements and basic atomic structure

SC-8-STM-U-2
Students will understand that because atomic structure is not directly

Core Content for Assessment

4.0

SC-08-1.1.1

Students will:

- interpret models/representations of elements;
- classify elements based upon patterns in their physical (e.g., density, boiling point, solubility) and chemical (e.g., flammability, reactivity) properties.

Models enhance understanding that an element is composed of a single type of atom.

Organization/interpretation of data illustrates that when elements are listed according to the number of protons, repeating patterns of physical (e.g., density, boiling point, solubility) and chemical properties (e.g., flammability, reactivity), can be used to identify families of elements