Unit 7- Balancing Act: Chemical Equations and Reactions

Content Area: **Science**
Course(s): **Chemistry in the Community (Chemcom)**
Time Period: **March**
Length: **6 weeks**
Status: **Published**

Transfer Skills

Balancing Act: Chemical Equations & Reactions

Enduring Understandings

Understanding of regularities and patterns in the periodic table allows for predictions of interactions among the elements.

Matter is conserved in a chemical reaction.

Balanced equations allow you to determine the amount of product produced from a given amount of reactant.

By considering the reactants and the products of a equations the type of reaction can be determined.

Essential Questions

How do chemical reactions obey the law of conservation of matter?

How are the of atoms in an equation determined?

How is a balanced chemical equation written, and how does it illustrate the Law of Conservation of Matter?

To what extent are all chemical reactions the same?

Content

Vocabulary:

Chemical Reaction
Law of Conservation of Mass
Reactant
Product
Subscript

Coefficient
Synthesis
Decomposition
Single and Double Replacement
Combustion

Skills

Determine the number of atoms in a compound.

Identify the reactants and the products of a chemical equation.

Define the Law of Conservation of Mass.

Balance chemical equations.

Write formula equations for a given chemical reaction.

Identify types of chemical reactions.

Resources

Standards

SCI.9-12.5.1.12.B.1	Design investigations, collect evidence, analyze data, and evaluate evidence to determine measures of central tendencies, causal/correlational relationships, and anomalous data.
SCI.9-12.5.1.12.B.2	Build, refine, and represent evidence-based models using mathematical, physical, and computational tools.
SCI.9-12.5.1.12.B.3	Revise predictions and explanations using evidence, and connect explanations/arguments to established scientific knowledge, models, and theories.
SCI.9-12.5.1.12.B.4	Develop quality controls to examine data sets and to examine evidence as a means of generating and reviewing explanations.
SCI.9-12.5.2.12.B.1	Model how the outermost electrons determine the reactivity of elements and the nature of the chemical bonds they tend to form.
SCI.9-12.5.2.12.B.2	Describe oxidation and reduction reactions, and give examples of oxidation and reduction reactions that have an impact on the environment, such as corrosion and the burning of fuel.
SCI.9-12.5.2.12.B.3	Balance chemical equations by applying the law of conservation of mass.