SCI10-CR1

Explore the properties of chemical reactions, including the role of energy changes, and applications of acids and bases.

Indicators for this outcome

(c) Observe and describe a variety of chemical reactions, including synthesis, decomposition, combustion, single replacement and double replacement.

(d) Demonstrate knowledge of Workplace Hazardous Materials Information System (WHMIS 1998 and WHMIS 2015) standards by selecting and applying proper techniques for handling and disposing of lab materials and interpreting *Materials Safety Data Sheets* (MSDS) and *Safety Data Sheets* (SDS).

(f) Differentiate between reactants and products in chemical reactions.

(g) Investigate the properties of endothermic and exothermic chemical reactions, including identifying where or how energy is absorbed or released in the reaction and identifying potential benefits and consequences of the reaction.

(h) Research practical examples of chemical reactions involving acids and bases, including neutralization reactions such as those involved in chemical spills, soda-acid fire extinguishers and antacids.

Pre-Lab Investigation

1. Define "reactant" as applied to chemical reactions.
2. Define "product" as applied to chemical reactions.
3. Define "catalyst" as applied to chemical reactions.
4. Define endothermic reaction.
5. Define exothermic reaction.

Reaction One

Synthesis Reaction

https://www.youtube.com/watch?v=64LMt9iUflU

List the Reactants:

Describe what happened? Did you witness an endothermic or exothermic reaction? Describe any catalysts needed for the reaction to occur.

Name and Describe the products produced:

Chemical Equation:

Reaction Two

Decomposition Reaction

https://www.youtube.com/watch?v=DLowiWyPDSE

List the Reactants:

Describe what happened? Did you witness an endothermic or exothermic reaction? Describe any catalysts needed for the reaction to occur.

Name and Describe the products produced:

Chemical Equation:

Reaction Three

Combustion Reaction

https://www.youtube.com/watch?v=KdmVoKhXOZ0

List the Reactants:

Describe what happened? Did you witness an endothermic or exothermic reaction? Describe any catalysts needed for the reaction to occur.

Name and Describe the products produced:

Chemical Equation:

Reaction Four

Single Replacement Reaction

https://www.youtube.com/watch?v=4-WiekTD4HQ

List the Reactants:

Describe what happened? Did you witness an endothermic or exothermic reaction? Describe any catalysts needed for the reaction to occur.

Name and Describe the products produced:

Chemical Equation:

Reaction Five

Double Replacement Reaction

https://www.youtube.com/watch?v=diW7q7RFJBM

List the Reactants:

Describe what happened? Did you witness an endothermic or exothermic reaction? Describe any catalysts needed for the reaction to occur.

Name and Describe the products produced:

Chemical Equation: