

**Inquiry Investigations™**  
**Chemistry - A Closer Look at Matter MODULE - 1287240**  
**Grades: 7-10**

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**New Jersey Academic Standards**  
**Science**  
**Grade 7**

STANDARD	NJ.5.1.	Scientific Processes: All students will develop problem-solving, decision-making and inquiry skills, reflected by formulating usable questions and hypotheses, planning experiments, conducting systematic observations, interpreting and analyzing data, drawing conclusions, and communicating results.
STRAND	5.1.8.A.2.	<p>Habits of Mind: Communicate experimental findings to others.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1:</li> </ul>

		<p>The Traffic Light Reaction</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.8.B.1.	<p>Inquiry and Problem Solving: Identify questions and make predictions that can be addressed by conducting investigations.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.8.B.2.	<p>Inquiry and Problem Solving: Design and conduct investigations incorporating the use of a control.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1:</li> </ul>

		<p>Testing Properties of Acids, Bases, and Salts</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.8.B.3.	<p>Inquiry and Problem Solving: Collect, organize, and interpret the data that result from experiments.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.8.C.1.	<p>Safety: Know when and how to use appropriate safety equipment with all classroom materials.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1:</li> </ul>

		<p>Separating the Compound Water</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.8.C.2.	<p>Safety: Understand and practice safety procedures for conducting science investigations.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> </ul>

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<b>STANDARD</b>	<b>NJ.5.3.</b>	<b>Mathematical Applications: All students will integrate mathematics as a tool for problem-solving in science, and as a means of expressing and/or modeling scientific theories.</b>
<b>STRAND</b>	<b>5.3.8.A.1.</b>	<p><b>Numerical Operations: Express quantities using appropriate number formats, such as: decimals, percents, scientific notation.</b></p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
<b>STRAND</b>	<b>5.3.8.B.1.</b>	<p><b>Geometry and Measurement: Perform mathematical computations using labeled quantities and express answers in correctly derived units.</b></p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> </ul>

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STRAND	5.3.8.C.1.	<p>Patterns and Algebra: Express physical relationships in terms of mathematical equations derived from collected data.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> </ul>



		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.3.8.D.1.	<p>Data Analysis and Probability: Represent and describe mathematical relationships among variables using: graphs; tables.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.3.8.D.2.	<p>Data Analysis and Probability: Analyze experimental data sets using measures of central tendency: mean, mode, median.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.3.8.D.3.	<p>Data Analysis and Probability: Construct and use a graph of experimental data to draw a line of best fit and identify a linear relationship between variables when appropriate.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.3.8.D.4.	<p>Data Analysis and Probability: Use computer spreadsheets, graphing and database applications to assist in quantitative analysis of data.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>

		Water Purification
STANDARD	NJ.5.4.	Nature and Process of Technology: All students will understand the interrelationships between science and technology and develop a conceptual understanding of the nature and process of technology.
STRAND	5.4.8.B.1.	<p>Nature of Technology: Analyze a product or system to determine the problem it was designed to solve, the design constraints, trade-offs and risks involved in using the product or system, how the product or system might fail, and how the product or system might be improved.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.4.8.C.1.	<p>Technological Design: Recognize how feedback loops are used to control systems.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STANDARD	NJ.5.5.	Characteristics of Life: All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.
STRAND	5.5.8.A.1.	<p>Matter, Energy and Organization in Living Systems: Explain how the products respiration and photosynthesis are recycled.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> </ul>
STANDARD	NJ.5.6.	Chemistry: All students will gain an understanding of the structure and behavior of matter.
STRAND	5.6.8.A.1.	<p>Structure and Properties of Matter: Know that all matter is composed of atoms that may join together to form molecules.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>

STRAND	5.6.8.A.2.	<p>Structure and Properties of Matter: Recognize that the phase of matter is determined by the arrangement and motion of atoms and molecules and that the motion of these particles is related to the energy of the system.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.8.A.3.	<p>Structure and Properties of Matter: Know that there are groups of elements that have similar properties, including highly reactive metals, less reactive metals, highly reactive non-metals, and some almost completely non-reactive gases.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.8.A.4.	<p>Structure and Properties of Matter: Recognize that a mixture often can be separated into the original substances using one of more of their characteristic physical properties</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.8.B.1.	<p>Chemical Reactions: Show how substances can chemically react with each other to form new substances having properties different from those of the original substances.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2:</li> </ul>

		<p>Exploring Changes in Matter</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.6.8.B.2.	<p>Chemical Reactions: Show that in most chemical reactions energy is transferred into or out of a system.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.8.B.4.	<p>Chemical Reactions: Illustrate how atoms are rearranged when substances react, but that the total number of atoms and the total mass of the products remain the same as the original substances.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3:</li> </ul>

		<p>Production of a Salt - Neutralization Reaction</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> </ul>
<b>STANDARD</b>	<b>NJ.5.7.</b>	<b>Physics: All students will gain an understanding of natural laws as they apply to motion, forces, and energy transformations.</b>
<b>STRAND</b>	<b>5.7.8.B.2.</b>	<p>Energy Transformations: Describe the nature of various forms of energy, including heat, light, sound, chemical, mechanical, and electrical and trace energy transformations from one form to another.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>

New Jersey Academic Standards  
Science  
Grade 8

<b>STANDARD</b>	<b>NJ.5.1.</b>	<b>Scientific Processes: All students will develop problem-solving, decision-making and inquiry skills, reflected by formulating usable questions and hypotheses, planning experiments, conducting systematic observations, interpreting and analyzing data, drawing conclusions, and communicating results.</b>
<b>STRAND</b>	<b>5.1.8.A.2.</b>	<p>Habits of Mind: Communicate experimental findings to others.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.8.B.1.	<p>Inquiry and Problem Solving: Identify questions and make predictions that can be addressed by conducting investigations.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2:</li> </ul>

		<p>Exploring Changes in Matter</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.8.B.2.	<p>Inquiry and Problem Solving: Design and conduct investigations incorporating the use of a control.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.8.B.3.	<p>Inquiry and Problem Solving: Collect, organize, and interpret the data that result from experiments.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3:</li> </ul>



		<p>Forming Organic Compounds</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.8.C.1.	<p>Safety: Know when and how to use appropriate safety equipment with all classroom materials.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.8.C.2.	<p>Safety: Understand and practice safety procedures for conducting science investigations.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3:</li> </ul>

		<p>Forming Ionic Bonds</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STANDARD	NJ.5.3.	Mathematical Applications: All students will integrate mathematics as a tool for problem-solving in science, and as a means of expressing and/or modeling scientific theories.
STRAND	5.3.8.A.1.	Numerical Operations: Express quantities using appropriate number formats, such as: decimals, percents, scientific notation.

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.3.8.B.1.	<p>Geometry and Measurement: Perform mathematical computations using labeled quantities and express answers in correctly derived units.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.3.8.C.1.	<p>Patterns and Algebra: Express physical relationships in terms of mathematical equations derived from collected data.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.3.8.D.1.	<p>Data Analysis and Probability: Represent and describe mathematical relationships among variables using: graphs; tables.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.3.8.D.2.	<p>Data Analysis and Probability: Analyze experimental data sets using measures of central tendency: mean, mode, median.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.3.8.D.3.	<p>Data Analysis and Probability: Construct and use a graph of experimental data to draw a line of best fit and identify a linear relationship between variables when appropriate.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1:</li> </ul>

		<p>Demonstrating Boyle's Gas Law</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.3.8.D.4.	<p>Data Analysis and Probability: Use computer spreadsheets, graphing and database applications to assist in quantitative analysis of data.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STANDARD	NJ.5.4.	<p>Nature and Process of Technology: All students will understand the interrelationships between science and technology and develop a conceptual understanding of the nature and process of technology.</p>
STRAND	5.4.8.B.1.	<p>Nature of Technology: Analyze a product or system to determine the problem it was designed to solve, the design constraints, trade-offs and risks involved in using the product or system, how the product or system might fail, and how the product or system might be improved.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.4.8.C.1.	<p>Technological Design: Recognize how feedback loops are used to control systems.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STANDARD	NJ.5.5.	<p>Characteristics of Life: All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.</p>
STRAND	5.5.8.A.1.	<p>Matter, Energy and Organization in Living Systems: Explain how the products respiration and photosynthesis are recycled.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STANDARD	NJ.5.6.	<p>Chemistry: All students will gain an understanding of the structure and behavior of matter.</p>
STRAND	5.6.8.A.1.	<p>Structure and Properties of Matter: Know that all matter is composed of atoms that may join together to form molecules.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.8.A.2.	<p>Structure and Properties of Matter: Recognize that the phase of matter is determined by the arrangement and motion of atoms and molecules and that the motion of these particles is related to the energy of the system.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.8.A.3.	<p>Structure and Properties of Matter: Know that there are groups of elements that have similar properties, including highly reactive metals, less reactive metals, highly reactive non-metals, and some almost completely non-reactive gases.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.8.A.4.	<p>Structure and Properties of Matter: Recognize that a mixture often can be separated into the original substances using one of more of their characteristic physical properties</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1:</li> </ul>

		<p>Classifying Matter</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.8.B.1.	<p>Chemical Reactions: Show how substances can chemically react with each other to form new substances having properties different from those of the original substances.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.6.8.B.2.	Chemical Reactions: Show that in most chemical reactions energy is



		<p>transferred into or out of a system.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.8.B.4.	<p>Chemical Reactions: Illustrate how atoms are rearranged when substances react, but that the total number of atoms and the total mass of the products remain the same as the original substances.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> </ul>
STANDARD	NJ.5.7.	<p>Physics: All students will gain an understanding of natural laws as they apply to motion, forces, and energy transformations.</p>
STRAND	5.7.8.B.2.	<p>Energy Transformations: Describe the nature of various forms of energy, including heat, light, sound, chemical, mechanical, and electrical and trace energy transformations from one form to another.</p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>

New Jersey Academic Standards  
Science  
Grade 9

STANDARD	NJ.5.1.	<p>Scientific Processes: All students will develop problem-solving, decision-making and inquiry skills, reflected by formulating usable questions and hypotheses, planning experiments, conducting systematic observations, interpreting and analyzing data, drawing conclusions, and communicating results.</p>
STRAND	5.1.12.A.1.	<p>Habits of Mind: When making decisions, evaluate conclusions, weigh evidence, and recognize that arguments may not have equal merit.</p>

- Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions
- Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds
- Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds
- Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases
- Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt
- Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds
- Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents
- Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter
- Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter
- Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements
- Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table
- Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures
- Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water
- Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction
- Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law
- Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts
- Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal
- Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction
- Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction
- Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction
- Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction
- Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction
- Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction
- Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction
- Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction
- Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification
- Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass
- Virtual Laboratory: Titrating an Acid of Unknown

		Concentration
STRAND	5.1.12.A.2.	<p>Habits of Mind: Assess the risks and benefits associated with alternative solutions.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.1.12.A.3.	<p>Habits of Mind: Engage in collaboration, peer review, and accurate reporting of findings.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4:</li> </ul>

		<p>Observing a Biochemical Reaction</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.12.B.1.	<p>Inquiry and Problem Solving: Select and use appropriate instrumentation to design and conduct investigations.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2:</li> </ul>

		<p>Observing Color Change in a Chemical Reaction</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.12.B.2.	<p>Inquiry and Problem Solving: Show that experimental results can lead to new questions and further investigations.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1:</li> </ul>

		<p>The Traffic Light Reaction</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.12.C.1.	<p>Safety: Understand, evaluate and practice safe procedures for conducting science investigations.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2:</li> </ul>

		<p>Chemical Reactions of Acids with a Metal</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STANDARD	NJ.5.2.	Science and Society: All students will develop an understanding of how people of various cultures have contributed to the advancement of science and technology, and how major discoveries and events have advanced science and technology.
STRAND	5.2.12.B.3.	<p>Historical Perspectives: Describe the historical origin of important scientific developments such as atomic theory, genetics, plate tectonics, etc., showing how scientific theories develop, are tested, and can be replaced or modified in light of new information and improved investigative techniques.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STANDARD	NJ.5.3.	Mathematical Applications: All students will integrate mathematics as a tool for problem-solving in science, and as a means of expressing and/or modeling scientific theories.
STRAND	5.3.12.A.1.	<p>Numerical Operations: Express quantities using appropriate number formats, such as: decimals, percents, scientific notation.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.3.12.B.1.	Geometry and Measurement: When performing mathematical operations with measured quantities, express answers to reflect the degree of

		<p>precision and accuracy of the input data.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.3.12.C.1.	<p>Patterns and Algebra: Apply mathematical models that describe physical phenomena to predict real world events.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> </ul>



		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.3.12.D.1.	<p>Data Analysis and Probability: Construct and interpret graphs of data to represent inverse and non-linear relationships, and statistical distributions.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1:</li> </ul>

		<p>The Traffic Light Reaction</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
<b>STANDARD</b>	<b>NJ.5.4.</b>	<b>Nature and Process of Technology: All students will understand the interrelationships between science and technology and develop a conceptual understanding of the nature and process of technology.</b>
<b>STRAND</b>	<b>5.4.12.C.1.</b>	<p>Technological Design: Plan, develop, and implement a proposal to solve an authentic, technological problem.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
<b>STANDARD</b>	<b>NJ.5.5.</b>	<b>Characteristics of Life: All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.</b>
<b>STRAND</b>	<b>5.5.12.A.2.</b>	<p>Matter, Energy and Organization in Living Systems: Explain how plants convert light energy to chemical energy.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> </ul>
<b>STRAND</b>	<b>5.5.12.A.3.</b>	<p>Matter, Energy and Organization in Living Systems: Describe how plants produce substances high in energy content that become the primary source of energy for life.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> </ul>
<b>STANDARD</b>	<b>NJ.5.6.</b>	<b>Chemistry: All students will gain an understanding of the structure and behavior of matter.</b>
<b>STRAND</b>	<b>5.6.12.A.1.</b>	<p>Structure and Properties of Matter: Know that atoms are made of a positive nucleus surrounded by negative electrons and that the nucleus, a tiny fraction of the volume of an atom, is composed of protons and neutrons, each almost 2,000 times more massive than an electron.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.12.A.2.	<p>Structure and Properties of Matter: Know that the number of protons in the nucleus defines the element.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.12.A.3.	<p>Structure and Properties of Matter: Know that an atom's electron arrangement, particularly the outermost electrons, determines how the atom can interact with other atoms.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.12.A.4.	<p>Structure and Properties of Matter: Explain that atoms form bonds (ionic and covalent) with other atoms by transferring or sharing electrons.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.12.A.5.	<p>Structure and Properties of Matter: Explain how the Periodic Table of Elements reflects the relationship between the properties of elements and their atomic structure.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.12.A.8.	<p>Structure and Properties of Matter: Know that many biological, chemical and physical phenomena can be explained by changes in the arrangement and motion of atoms and molecules.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.6.12.A.7.	<p>Structure and Properties of Matter: Recognize that the properties of matter are related to the structure and arrangement of their molecules and atoms, such as in metallic and nonmetallic crystals and carbon compounds.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.6.12.B.1.	<p>Chemical Reactions: Explain that the rate of reactions among atoms and molecules depends on how often they encounter one another and that the rate is affected by nature of reactants, concentration, pressure, temperature, and the presence of a catalyst.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> </ul>

		<ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
<b>STANDARD</b>	<b>NJ.5.7.</b>	<b>Physics: All students will gain an understanding of natural laws as they apply to motion, forces, and energy transformations.</b>
<b>STRAND</b>	<b>5.7.12.A.1.</b>	<p>Motion and Forces: Apply the mathematical relationship between the mass of an object, the net force exerted on it, and the resulting acceleration.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
<b>STRAND</b>	<b>5.7.12.A.8.</b>	<p>Motion and Forces: Explain how electromagnetic, gravitational, and nuclear forces can be used to produce energy by causing chemical, physical, or nuclear changes and relate the amount of energy produced to the nature and relative strength of the force.</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
<b>STANDARD</b>	<b>NJ.5.9.</b>	<b>Astronomy and Space Science: All students will gain an understanding of the origin, evolution, and structure of the universe.</b>
<b>STRAND</b>	<b>5.9.12.D.1.</b>	<p>Galaxies and Universe: Describe data gathering and observation technologies and explain how they are used to explore the solar system and beyond.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
<b>STANDARD</b>	<b>NJ.5.10.</b>	<b>Environmental Studies: All students will develop an understanding of the environment as a system of interdependent components affected by human activity and natural phenomena.</b>
<b>STRAND</b>	<b>5.10.12.A.1.</b>	<p>Natural Systems and Interactions: Distinguish naturally occurring process from those believed to have been modified by human interaction or activity: climate change, ozone production, erosion and deposition, threatened and endangered species.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
<b>STRAND</b>	<b>5.10.12.B.1.</b>	<b>Human Interactions and Impact: Assess the impact of human activities on</b>

		<p>the cycling of matter and the flow of energy through ecosystems.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.10.12.B.2.	<p>Human Interactions and Impact: Use scientific, economic, and other data to assess environmental risks and benefits associated with societal activity.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>

New Jersey Academic Standards  
Science  
Grade 10

STANDARD	NJ.5.1.	<p>Scientific Processes: All students will develop problem-solving, decision-making and inquiry skills, reflected by formulating usable questions and hypotheses, planning experiments, conducting systematic observations, interpreting and analyzing data, drawing conclusions, and communicating results.</p>
STRAND	5.1.12.A.1.	<p>Habits of Mind: When making decisions, evaluate conclusions, weigh evidence, and recognize that arguments may not have equal merit.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2:</li> </ul>



		<p>Chemical Reactions of Acids with a Metal</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.12.A.2.	<p>Habits of Mind: Assess the risks and benefits associated with alternative solutions.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.1.12.A.3.	<p>Habits of Mind: Engage in collaboration, peer review, and accurate reporting of findings.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1:</li> </ul>

		<p>Investigating Mixtures</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.12.B.1.	<p>Inquiry and Problem Solving: Select and use appropriate instrumentation to design and conduct investigations.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1:</li> </ul>

		<p>Examining Elements</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.12.B.2.	<p>Inquiry and Problem Solving: Show that experimental results can lead to new questions and further investigations.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1:</li> </ul>

		<p>Classifying Matter</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.1.12.C.1.	<p>Safety: Understand, evaluate and practice safe procedures for conducting science investigations.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3:</li> </ul>

		<p>Forming Organic Compounds</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STANDARD	NJ.5.2.	Science and Society: All students will develop an understanding of how people of various cultures have contributed to the advancement of science and technology, and how major discoveries and events have advanced science and technology.
STRAND	5.2.12.B.3.	<p>Historical Perspectives: Describe the historical origin of important scientific developments such as atomic theory, genetics, plate tectonics, etc., showing how scientific theories develop, are tested, and can be replaced or modified in light of new information and improved investigative techniques.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1:</li> </ul>

		<p>Classifying Matter</p> <ul style="list-style-type: none"> <li>Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
<b>STANDARD</b>	<b>NJ.5.3.</b>	<b>Mathematical Applications: All students will integrate mathematics as a tool for problem-solving in science, and as a means of expressing and/or modeling scientific theories.</b>
<b>STRAND</b>	<b>5.3.12.A.1.</b>	<p>Numerical Operations: Express quantities using appropriate number formats, such as: decimals, percents, scientific notation.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
<b>STRAND</b>	<b>5.3.12.B.1.</b>	<p>Geometry and Measurement: When performing mathematical operations with measured quantities, express answers to reflect the degree of precision and accuracy of the input data.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
<b>STRAND</b>	<b>5.3.12.C.1.</b>	<p>Patterns and Algebra: Apply mathematical models that describe physical phenomena to predict real world events.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2:</li> </ul>

		<p>A Closer Look at the Periodic Table</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.3.12.D.1.	<p>Data Analysis and Probability: Construct and interpret graphs of data to represent inverse and non-linear relationships, and statistical distributions.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STANDARD	NJ.5.4.	Nature and Process of Technology: All students will understand the interrelationships between science and technology and develop a conceptual understanding of the nature and process of technology.
STRAND	5.4.12.C.1.	<p>Technological Design: Plan, develop, and implement a proposal to solve an authentic, technological problem.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STANDARD	NJ.5.5.	Characteristics of Life: All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.
STRAND	5.5.12.A.2.	Matter, Energy and Organization in Living Systems: Explain how plants convert light energy to chemical energy.



		<ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> </ul>
STRAND	5.5.12.A.3.	<p>Matter, Energy and Organization in Living Systems: Describe how plants produce substances high in energy content that become the primary source of energy for life.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> </ul>
STANDARD	NJ.5.6.	Chemistry: All students will gain an understanding of the structure and behavior of matter.
STRAND	5.6.12.A.1.	<p>Structure and Properties of Matter: Know that atoms are made of a positive nucleus surrounded by negative electrons and that the nucleus, a tiny fraction of the volume of an atom, is composed of protons and neutrons, each almost 2,000 times more massive than an electron.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.12.A.2.	<p>Structure and Properties of Matter: Know that the number of protons in the nucleus defines the element.</p> <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.12.A.3.	Structure and Properties of Matter: Know that an atom's electron

		<p>arrangement, particularly the outermost electrons, determines how the atom can interact with other atoms.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.12.A.4.	<p>Structure and Properties of Matter: Explain that atoms form bonds (ionic and covalent) with other atoms by transferring or sharing electrons.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.12.A.5.	<p>Structure and Properties of Matter: Explain how the Periodic Table of Elements reflects the relationship between the properties of elements and their atomic structure.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>
STRAND	5.6.12.A.8.	<p>Structure and Properties of Matter: Know that many biological, chemical and physical phenomena can be explained by changes in the arrangement and motion of atoms and molecules.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.6.12.A.7.	<p>Structure and Properties of Matter: Recognize that the properties of matter are related to the structure and arrangement of their molecules and atoms, such as in metallic and nonmetallic crystals and carbon compounds.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 1: Modeling Atoms and Ions</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 2: Forming Covalent Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 1 Activity 3: Forming Ionic Bonds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 2: Crystal Structure of Common Salt</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 3: Forming Organic Compounds</li> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 4: Chemical Structure of Soaps and Detergents</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 1: Classifying Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 2: A Closer Look at the Periodic Table</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
STRAND	5.6.12.B.1.	<p>Chemical Reactions: Explain that the rate of reactions among atoms and molecules depends on how often they encounter one another and that the rate is affected by nature of reactants, concentration, pressure, temperature, and the presence of a catalyst.</p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 1 Lab 2 Activity 1: Molecular Structure of Acids and Bases</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 3 Activity 2: Exploring Changes in Matter</li> </ul>

		<ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 5 Activity 1: Investigating Mixtures</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 1: Separating the Compound Water</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 6 Activity 2: Writing a Description of a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 1: Testing Properties of Acids, Bases, and Salts</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 2: Chemical Reactions of Acids with a Metal</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 10 Activity 3: Production of a Salt - Neutralization Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 11 Activity 1: The Traffic Light Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 2: Observing Color Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 3: Observing Gas Production During a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 4: Observing a Biochemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 1: An Exothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 9 Activity 2: An Endothermic Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 2: Demonstrating Conservation of Mass</li> <li>• Teacher Resource CD: Matter - Chemical Properties and Changes</li> <li>• Virtual Laboratory: Titrating an Acid of Unknown Concentration</li> </ul>
<b>STANDARD</b>	<b>NJ.5.7.</b>	<b>Physics: All students will gain an understanding of natural laws as they apply to motion, forces, and energy transformations.</b>
<b>STRAND</b>	<b>5.7.12.A.1.</b>	<p><b>Motion and Forces: Apply the mathematical relationship between the mass of an object, the net force exerted on it, and the resulting acceleration.</b></p> <ul style="list-style-type: none"> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 4 Activity 1: Examining Elements</li> <li>• Chemistry - A Closer Look at Matter: Unit 2 Lab 7 Activity 1: Demonstrating Boyle's Gas Law</li> <li>• Chemistry - A Closer Look at Matter: Unit 3 Lab 8 Activity 1: Observing Temperature Change in a Chemical Reaction</li> <li>• Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
<b>STRAND</b>	<b>5.7.12.A.8.</b>	<p><b>Motion and Forces: Explain how electromagnetic, gravitational, and nuclear forces can be used to produce energy by causing chemical, physical, or nuclear changes and relate the amount of energy produced to the nature and relative strength of the force.</b></p> <ul style="list-style-type: none"> <li>• Teacher Resource CD: Matter - Physical Properties and Changes</li> </ul>

STANDARD	NJ.5.9.	Astronomy and Space Science: All students will gain an understanding of the origin, evolution, and structure of the universe.
STRAND	5.9.12.D.1.	Galaxies and Universe: Describe data gathering and observation technologies and explain how they are used to explore the solar system and beyond. <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STANDARD	NJ.5.10.	Environmental Studies: All students will develop an understanding of the environment as a system of interdependent components affected by human activity and natural phenomena.
STRAND	5.10.12.A.1.	Natural Systems and Interactions: Distinguish naturally occurring process from those believed to have been modified by human interaction or activity: climate change, ozone production, erosion and deposition, threatened and endangered species. <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.10.12.B.1.	Human Interactions and Impact: Assess the impact of human activities on the cycling of matter and the flow of energy through ecosystems. <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>
STRAND	5.10.12.B.2.	Human Interactions and Impact: Use scientific, economic, and other data to assess environmental risks and benefits associated with societal activity. <ul style="list-style-type: none"> <li>Chemistry - A Closer Look at Matter: Unit 4 Lab 12 Activity 1: Water Purification</li> </ul>

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