### EIGHTH GRADE STANDARDS

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<th>Standard</th>
<th>Conceptual Strand</th>
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<tr>
<td>5. Biology</td>
<td>Biodiversity &amp; Change</td>
<td>How does natural selection explain organisms have changed over time?</td>
<td>1. Identify various criteria used to classify organisms into groups.</td>
<td>1. Identify atoms as the fundamental particles that make up matter.</td>
<td>1. Use a simple classification key to identify an unknown organism.</td>
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<td>2. Use a simple classification key to identify a specific organism.</td>
<td>2. Use a simple classification key to identify an organism.</td>
<td>2. Analyze structural, behavioral, and physiological adaptations to predict which populations are likely to survive in a particular environment.</td>
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<td>3. Analyze how structural, behavioral, and physiological adaptations within a population enable it to survive in a given environment.</td>
<td>3. Compare and contrast the ability of an organism to survive under different environmental conditions.</td>
<td>3. Identify several reasons for the importance of maintaining the earth’s biodiversity.</td>
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<td>4. Describe the importance of maintaining the earth’s biodiversity.</td>
<td>4. Collect and analyze data relating to variation within a population of organisms.</td>
<td>4. Explain why variation within a population can enhance the chances for group survival.</td>
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<td>5. Investigate fossils in sedimentary rock layers to gather evidence of changing life forms.</td>
<td>5. Prepare a poster that illustrates the major factors responsible for reducing the amount of global biodiversity.</td>
<td>5. Compare fossils found in sedimentary rock to determine their relative age.</td>
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<td>9. Matter</td>
<td>Embedded Inquiry</td>
<td>How does the structure of matter influence its physical and chemical behavior?</td>
<td>1. Understand that all matter is made up of atoms.</td>
<td>1. Identify atoms as the fundamental particles that make up matter.</td>
<td>1. Distinguish between mass and weight using appropriate measuring instruments and units.</td>
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<td>2. Explain that matter has properties that are determined by the structure and arrangement of its atoms.</td>
<td>2. Use evidence from a dataset to determine cause and effect relationships.</td>
<td>2. Identify tools and techniques needed to gather, organize, analyze, and interpret data.</td>
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<td>3. Interpret data from an investigation to differentiate between physical and chemical changes.</td>
<td>3. Identify tools and techniques used to conduct scientific inquiry.</td>
<td>3. Design and conduct an open-ended scientific investigation to answer a question that includes a control and appropriate variables.</td>
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<td>4. Distinguish among elements, compounds, and mixtures.</td>
<td>4. Design and conduct an open-ended scientific investigation to answer a question that includes a control and appropriate variables.</td>
<td>4. Design and conduct an experiment to determine possible sources of bias or error, state alternative explanations, and identify questions that are essential for bringing about the 21st century.</td>
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<td>5. Apply the chemical properties of matter to illustrate a mixture of gases.</td>
<td>5. Compare and contrast the structure of matter in an element and an atom.</td>
<td>5. Perform an investigation to determine possible sources of bias or error, state alternative explanations, and identify questions that are essential for bringing about the 21st century.</td>
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<td>6. Use the periodic table to determine the characteristics of an element.</td>
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<td>9. Explain the basic difference between atoms and bases.</td>
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<td>10. Identify the atomic number, atomic mass, number of protons, neutrons, and electrons in an atom of an element using the periodic table.</td>
<td>10. Identify the reactants and products of a chemical equation.</td>
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<td>12. Distinguish between the reactants and products of a chemical equation.</td>
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<td>13. Determine whether a substance is an acid or a base by its reaction to an indicator.</td>
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**Grade Level Expectations**

- A rich variety of complex organisms have developed in response to a continually changing environment.
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