

## GLOBE Correlation to the Michigan Curriculum Framework

|  | <b><i>Constructing Benchmarks</i></b>                                  |  |
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| <b>Elementary</b>  | <b>Middle School</b>   | <b>High School</b>   |
| 1. Generate reasonable questions about the world based on observation.                         | 1. Generate scientific questions about the world based on observation. | 1. Develop questions or problems for investigation that can be answered empirically. |
| 2. Develop solutions to unfamiliar problems through reasoning, observation, and/or experiment. | 2. Design and conduct simple investigations.                           | 2. Suggest empirical tests of hypotheses.  |
|  |  | 3. Design and conduct scientific investigations.                                     |
| 4. Use simple measurement devices to make metric measurement.                                  | 4. Use measurement devices to provide consistency in an investigation. | 6. Recognize and explain the limitations of measuring devices.                       |
| 5. Develop strategies and skills for information gathering and problem solving.                | 5. Use sources of information to help solve problems.                  | 7. Gather and synthesize information from books and other sources of information.    |

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| <p>6. Construct charts and graphs and prepare summaries of observations.</p>  | <p>6. Write and follow procedures in the form of step-by-step instructions, recipes, formulas, flow diagrams, and sketches.</p> | <p>8. Discuss topics in groups by being able to restate or summarize what others have said, ask for clarification or elaboration, and take alternative perspectives.</p> |
|   | <p><b><i>Reflecting Benchmarks</i></b></p>  |  |
| <p>1. Develop an awareness of the need for evidence in making decisions scientifically.</p>                             | <p>1. Evaluate the strengths and weaknesses of claims, arguments, or data.</p>  | <p>1. Justify plans or explanations on a theoretical or empirical basis.</p>   |
|   | <p>2. Describe limitations in personal knowledge.</p>   | <p>2. Describe some general limitations of scientific knowledge.</p>   |
| <p>2. Show how science concepts can be interpreted through creative expression such as language arts and fine arts.</p> | <p>3. Show how common themes of science, mathematics and technology apply in real-world contexts.</p>                           | <p>3. Show how common themes of science, mathematics, and technology apply in real-world contexts.</p>   |

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| 3. Describe ways in which technology is used in everyday life.                             | 4. Describe the advantages and risks of new technologies.  |  |
| 4. Develop an awareness of and sensitivity to the natural world.                           |  |  |
| 5. Develop an awareness of contributions made to science by people of diverse backgrounds. | 5. Recognize the contributions made in science by cultures and individuals of diverse backgrounds. | 6. Describe the historical, political, and social factors affecting developments in science. |
|  | <b><i>Ecosystems</i></b>   |  |
| 2. Explain common patterns of interdependence and interrelationships of living things.     | 1. Describe common patterns of relationships among populations.                                    | 1. Describe common ecological relationships among species.                                   |
| 5. Describe positive and negative effects of humans on the environment.                    | 6. Describe ways in which humans alter the environment.  | 6. Explain the effects of agriculture and other human activities on selected ecosystems.     |

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|   |   | <b>Geosphere</b>  |  |
| 1. Describe major features of the Earth's surface.            | 1. Describe and identify surface features using maps.                                     | 1. Explain the surface features of the Great Lakes region using Ice Age theory. |  |
| 2. Recognize and describe different types of earth materials. |   |   |  |
| 4. Describe natural changes in the Earth's surface.           | 4. Explain how rocks are broken down, how soil is formed and how surface features change. |   |  |
|   | <b>Hydrosphere</b>  |   |  |
| 1. Describe how water exists                                  | 1. Describe various forms that water takes on the   |   |  |

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| on Earth in three states.                                     | earth's surface and conditions under which they exist.   |  |
|   | <b><i>Atmosphere and Weather</i></b>   |  |
| 1. Describe the atmosphere.                                   | 1. Describe the composition and characteristics of the atmosphere.                               | 1. Describe patterns of air movement in the atmosphere and how they affect weather conditions. |
| 2. Describe weather conditions and climates.                  | 2. Describe patterns of changing weather and how they are measured.                              |  |
| 3. Describe seasonal changes in weather.                      |  |  |
|   | <b><i>Space Science</i></b>  |  |
| 2. Describe the motions of the Earth and moon around the sun. | 2. Describe, compare, and explain the motions of planets, moons, and comets in the solar system. | 3. Describe the position and motion of our solar system in the universe.                       |

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|  | 3. Describe and explain common observations of the day and night skies.  | 4. Explain why seasons occur on earth.                                 |
|  | <b><i>Matter and Energy</i></b>  |  |
| 1. Classify common objects and substances according to observable attributes: color, size, shape, smell, hardness, texture, flexibility, length, weight, buoyancy, states of matter, or magnetic properties. | 1. Measure physical properties of objects or substances (mass, weight, area, temperature, dimensions, volume).                         | 1. Describe and compare objects in terms of mass, volume, and density. |
| 2. Measure weight, dimensions, and temperature of appropriate objects and materials.   | 2. Describe when length, mass, weight, area, or volume are appropriate to describe the size of an object or the amount of a substance. | 2. Explain how families of elements are related by common properties.  |

3. Classify substances as elements, compounds, or mixtures.

3. Analyze properties of common household and agricultural materials in terms of risk/benefit balance.