

Huron County Nature Center Wilderness Arboretum

Appendix A

Targeted Michigan Science Benchmarks

Strand I: Construct New Scientific and Personal Knowledge

Content Standard 1: All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology; learn from books and other sources of information; communicate findings of investigations using appropriate technology. (Constructing)

Benchmark

Generate reasonable questions about the world based on observation. (SCI.I.1.E.1)

Strand II: Reflect on the Nature, Adequacy, and Connections Across Scientific Knowledge

Content Standard 1: All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science. (Reflecting on Scientific Knowledge)

Benchmark

Develop an awareness of and sensitivity to the natural world. (SCI.II.1.E.4)

Strand III: Use Scientific Knowledge from the Life Sciences in Real-World Contexts

Content Standard: 2. All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions. (Organization of Living Things)

Elementary	Middle School	High School
1. Explain characteristics and functions of observable body parts in a variety of animals.		
2. Compare and contrast or classify familiar organisms on the basis of observable physical characteristics.	1. Compare and classify organisms into major groups on the basis of their structure.	1. Classify major groups of organisms to the kingdom level.
3. Describe life cycles of familiar organisms.	2. Describe the life cycle of a flowering plant.	3. Explain the process of food storage and food use in

		organisms.
4. Compare and contrast food, energy, and environmental needs of selected organisms.	3. Describe evidence that plants make and store food.	
5. Explain functions of selected seed plant parts.		

Strand: III. Use Scientific Knowledge from the Life Sciences in Real-World Contexts

Content Standard: 4. All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments; and analyze how species change through time. (Evolution)

Elementary	Middle School	High School
2. Explain how physical and behavioral characteristics of organisms help them to survive in their environments.	2. Explain how new traits might become established in a population and how species become extinct.	

Strand: III. Use Scientific Knowledge from the Life Sciences in Real-World Contexts

Content Standard: 5. All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe how materials cycle through an ecosystem and get reused in the environment; and analyze how humans and the environment interact. (Ecosystems)

Elementary	Middle School	High School
1. Identify familiar organisms as part of a food chain or food web and describe their feeding relationships within the web.	1. Describe common patterns of relationships among populations.	1. Describe common ecological relationships between and among species and their environments.
2. Describe the basic requirements for all living things to maintain their existence..	2. Describe how all organisms in an ecosystem acquire energy directly or indirectly from sunlight.	2. Explain how energy flows through familiar ecosystems.
3. Design systems that encourage growing of particular plants or animals.	3. Predict the effects of changes in one population in a food web on other	3. Describe general factors regulating population size in ecosystems.

	populations.	
4. Describe positive and negative effects of humans on the environment.	4. Describe the likely succession of a given ecosystem over time.	4. Describe responses of an ecosystem to events that cause it to change.
	5. Explain how humans use and benefit from plant and animal materials.	5. Describe how carbon and soil nutrients cycle through selected ecosystems.
	6. Describe ways in which humans alter the environment.	