

Backyard Birding

- S.IP.03.11** Make purposeful observation of the natural world using the appropriate senses.
- S.IP.03.12** Generate questions based on observations.
- S.IP.03.13** Plan and conduct simple and fair investigations.
- S.IA.03.11** Summarize information from charts and graphs to answer scientific questions.
- S.IA.03.12** Share ideas about science through purposeful conversation in collaborative groups.
- S.IA.03.13** Communicate and present findings of observations and investigations.
- S.IA.03.14** Develop research strategies and skills for information gathering and problem solving.
- S.RS.03.11** Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.
- S.RS.03.18** Describe the effect humans and other organisms have on the balance of the natural world.
- L.OL.03.32** Identify and compare structures in animals used for controlling body temperature, support, movement, food-getting, and protection (for example: fur, wings, teeth, scales).
- L.OL.03.42** Classify animals on the basis of observable physical characteristics (backbone, body coverings, limbs).
- L.EV.03.12** Relate characteristics and functions of observable body parts to the ability of animals to live in their environment (sharp teeth, claws, color, body coverings).

Great Lakes Adventure

- S.IP.E.1** Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.
- S.IA.E.1** Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.
- S.RS.E.1** Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision making and the application of science throughout history and within society.
- L.OLE.3** Structures and Functions—Organisms have different structures that serve different functions in growth, survival and reproduction.
- L.OLE.4** Classification—Organisms can be classified on the basis of observable characteristics.
- L.EV.E.1** Environmental adaptation—Different kinds of organisms have characteristics that help them to live in different environments.
- E.ES.E.4** Natural Resources—The supply of many natural resources is limited. Humans have devised methods for extending their use of natural resources through recycling, reuse, and renewal.
- E.ES.E.5** Human Impact—Humans depend on their natural and constructed environment. Humans change environments in ways that are helpful or harmful for themselves and other organisms.
- E.SE.E.1** Earth Materials—Earth materials that occur in nature include rocks, minerals, soils, water and the gases of the atmosphere. Some Earth materials have properties which sustain plant and animal life.
- E.SE.E.2** Surface Changes—The surface of Earth changes. Some changes are due to slow processes, such as erosion and weathering; and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.
- LS1.B: Growth and Development of Organisms**—Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles.
 - **3-LS1-1** Patterns of change can be used to make predictions.
- LS2.C** Ecosystem Dynamics, Functioning, and Resilience—When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.

LS2.D Social Interactions and Group Behavior—Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size.

- **3-LS2-1; 3-LS4-3** Cause and effect relationships are routinely identified and used to explain change.
- **3-LS3-2** Use evidence to support the explanation that traits can be influenced by the environment.
- **3-LS3-2** Use evidence (e.g., observations, patterns) to support an explanation.

LS3.A: Inheritance of Traits—Many characteristics of organisms are inherited from their parents. (3-LS3-1)

LS3.A: Inheritance of Traits—Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (3-LS3-2)

LS3.B: Variation of Traits—Different organisms vary in how they look and function because they have different inherited information (3-LS3-1)

LS3.B: Variation of Traits—The environment also affects the traits that an organism develops.

- **3-LS3-1** Similarities and differences in patterns can be used to sort and classify natural phenomena.
- **3-LS3-2; 3-LS4-2** Cause and effect relationships are routinely identified and used to explain change.

LS4.C Adaptation—For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.

LS4.D Biodiversity and Humans—Populations live in a variety of habitats, and change in those habitats affects the organisms living there.

- **3-LS4-1** Science assumes consistent patterns in natural systems.
- **3-LS4-1** Observable phenomena exist from very short to very long time periods.
- **3-LS4-2** Use evidence (e.g., observations, patterns) to construct an explanation.
- **3-LS4-3** Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
- **3-LS4-4** Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.
- **3-LS4-4** Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem.

3-G1.0.2 Use thematic maps to identify and describe the physical and human characteristics of Michigan.

3-G2.0.2 Describe different regions to which Michigan belongs (e.g., Great Lakes Region, Midwest).

3-G4.0.3 Describe some of the current movements of goods, people, jobs or information to, from, or within Michigan and explain reasons for the movements.

3-E1.0.3 Analyze how Michigan's location and natural resources influenced its economic development (e.g., how waterways and other natural resources have influenced economic activities such as mining, lumbering, automobile manufacturing, and furniture making).

RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

RI.3.7 Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories

MP.2 Reason abstractly and quantitatively.

Invasive Species Musical Chairs

E.E.S.5 Human Impact—Humans depend on their natural and constructed environment. Humans change environments in ways that are helpful or harmful for themselves and other organisms.

Sea Lamprey Suck! Vampire Tag

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Let's Rock

S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.

S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.

S.IP.03.12 Generate questions based on observations.

S.IP.03.13 Plan and conduct simple and fair investigations.

S.IP.03.14 Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer).

S.IP.03.15 Make accurate measurements with appropriate units (centimeters, meters, Celsius, grams, seconds, minutes) for the measurement tool.

S.IA.03.11 Summarize information from charts and graphs to answer scientific questions.

E.ES.03.41 Identify natural resources (metals, fuels, fresh water, fertile soil, and forests). *

E.ES.03.51 Describe ways humans are dependent on the natural environment (forests, water, clean air, Earth materials) and constructed environments (homes, neighborhoods, shopping malls, factories, and industry).

E.SE.03.13 Recognize and describe different types of Earth materials (mineral, rock, clay, boulder, gravel, sand, soil, water, and air). *

E.SE.03.14 Recognize that rocks are made up of minerals.

E.SE.03.31 Identify Earth materials used to construct some common objects (bricks, buildings, roads, glass).

Michigan through the Ages Tour

3 – H3.0.1 Identify questions historians ask in examining the past in Michigan (e.g. What happened? When did it happen? Who was involved? How and why did it happen?)

3 – H3.0.2 Explain how historians use primary and secondary sources to answer questions about the past.

3 – H3.0.3 Describe the causal relationships between three events in Michigan's past (e.g. Erie Canal, more people came, statehood).

3 – H3.0.5 Use informational text and visual data to compare how American Indians and settlers in the early history of Michigan adapted to, used and modified their environment.

3 – H3.0.6 Use a variety of sources to describe interactions that occurred between American Indians and the first European explorers and settlers in Michigan.

3 – H3.0.7 Use a variety of primary and secondary sources to construct a historical narrative about daily life in the early settlements of Michigan (pre-statehood).

3 – H 3.0.8 Use case studies or stories to describe how the ideas or actions of individuals affected the history of Michigan.

3 – G1.0.1 Use cardinal directions (north, south, east, west) to describe the relative location of significant places in the immediate environment.

3 – G1.0.2 Use thematic maps to identify and describe the physical and human characteristics of Michigan.

3 – G4.0.1 Describe major kinds of economic activity in Michigan today, such as agriculture (e.g., corn, cherries, dairy), manufacturing (e.g., automobiles, wood products), services and tourism, research and development (e.g., Automation Alley, life sciences corridor, university communities), and explain the factors influencing the location of these economic activities.

3 – G4.0.2 Describe diverse groups that have come into a region of Michigan and reasons why they came (push/pull factors).

3 – G5.0.1 Locate natural resources in Michigan and explain the consequences of their use.

3 – G5.0.2 Describe how people adapt to, use and modify the natural resources of Michigan.

3 – E1.0.1 Explain how scarcity, opportunity costs, and choices affect what is produced and consumed in Michigan.

3 – E1.0.3 Analyze how Michigan’s location and natural resources influenced its economic development (e.g., how waterways and other natural resources have influenced economic activities such as mining, lumbering, automobile manufacturing, and furniture making).

Michigan through the Ages: Colombian Exchange Activity

3 – H3.0.1 Identify questions historians ask in examining the past in Michigan (e.g., What happened? When did it happen? Who was involved? How and why did it happen?)

3—H3.05 Use information text and visual data to compare how American Indians and settlers in the early history of Michigan adapted to, used, and modified their environment.

3 – H3.0.6 Use a variety of sources to describe interactions that occurred between American Indians and the first European explorers and settlers in Michigan.

3—HG1.0.1 Use cardinal directions (north, south, east, west) to describe the relative location of significant places in the immediate environment.

One-room Schoolhouse Tour

3 – H3.0.1 Identify questions historians ask in examining the past in Michigan (e.g., What happened? When did it happen? Who was involved? How and why did it happen?)

3 – H3.0.2 Explain how historians use primary and secondary sources to answer questions about the past.

3 – H3.0.8 Use case studies or stories to describe how the ideas or actions of individuals affected the history of Michigan.