



ZIIBIWING CENTER

of Anishinabe Culture & Lifeways

THE SAGINAW CHIPPEWA INDIAN TRIBE OF MICHIGAN

Iskimazigan (Sugarbush)

Curriculum Tie-Ins

Special thanks to the Michigan Department of Education for allowing us to publish these curriculum points on our Ziibiwing Center website. The complete MDE standards and curriculum documents may be accessed at:
<http://www.michigan.gov/mde/0,1607,7-140-28753---,00.html>

6th Grade

Social Studies

6-G5.1.1→ Describe the environmental effects of human activity on the atmosphere (air), biosphere (people, animals, and plants), lithosphere (soil), and hydrosphere (water) (e.g., changes in the tropical forest environments in Brazil, Peru, and Costa Rica).

Science

S.IA.M.1→ Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.

S.IA.06.12→ Evaluate data, claims, and personal knowledge through collaborative science discourse.

S.RS.M.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.

S.RS.06.13→ Identify the need for evidence in making scientific decisions.

S.RS.06.17→ Describe the effect humans and other organisms have on the balance of the natural world.

S.RS.06.19→ Describe how science and technology have advanced because of the contributions of many people throughout history and across cultures.

P.EN.M.1➔ Kinetic and Potential Energy- Objects and substances in motion have kinetic energy. Objects and substances may have potential energy due to their relative positions in a system. Gravitational, elastic, and chemical energy are all forms of potential energy.

P.EN.06.11➔ Identify kinetic or potential energy in everyday situations (for example: stretched rubber band, objects in motion, ball on a hill, food energy).

P.EN.M.4➔ Energy Transfer- Energy is transferred from a source to a receiver by radiation, conduction, and convection. When energy is transferred from one system to another, the quantity of energy before the transfer is equal to the quantity of energy after the transfer.

P.EN.06.41➔ Explain how different forms of energy can be transferred from one place to another by radiation, conduction, or convection.

P.CM.M.1➔ Changes in State- Matter changing from state to state can be explained by using models which show that matter is composed of tiny particles in motion. When changes of state occur, the atoms and/or molecules are not changed in structure. When the changes in state occur, mass is conserved because matter is not created or destroyed.

P.CM.06.11➔ Describe and illustrate changes in state, in terms of the arrangement and relative motion of the atoms or molecules.

L.OL.M.5➔ Producers, Consumers, and Decomposers – Producers are mainly green plants that obtain energy from the sun by the process of photosynthesis. All animals, including humans, are consumers that meet their energy needs by eating other organisms or their products. Consumers break down the structures of the organisms they eat to make the materials they need to grow and function. Decomposers, including bacteria and fungi, use dead organisms or their products to meet their energy needs.

L.OL.06.51➔ Classify producers, consumers, and decomposers based on their source of food (the source of energy and building materials).

L.OL.06.52➔ Distinguish between the ways in which consumers and decomposers obtain energy.

L.EC.M.2➔ Relationships of Organisms- Two types of organisms may interact with one another in several ways: they may be in a producer/consumer, predator/ prey, or parasite/host relationship. Some organisms may scavenge or decompose another. Relationships may be competitive or mutually beneficial. Some species have become so adapted to each other that neither could survive without the other.

L.EC.06.21➔ Describe common patterns of relationships between and among populations (competition, parasitism, symbiosis, predator/prey).

L.EC.06.22➔ Explain how two populations of organisms can be mutually beneficial and how that can lead to interdependency.

L.EC.06.23➔ Predict how changes in one population might affect other populations based upon their relationships in the food web.

L.EC.M.3➔ Biotic and Abiotic Factors- The number of organisms and populations an ecosystem can support depends on the biotic (living) resources available and abiotic (nonliving) factors, such as quality of light and water, range of temperatures, and soil composition.

L.EC.06.32 Identify the factors in an ecosystem that influence changes in population size.

L.EC.M.4➔ Environmental Impact of Organisms- All organisms (including humans) cause change in the environment where they live. Some of the changes are harmful to the organism or other organisms, whereas others are helpful.

L.EC.06.41➔ Describe how human beings are part of the ecosystem of the Earth and that human activity can purposefully, or accidentally, alter the balance in ecosystems.

English Language Arts

L.CN.06.01➔ Students will respond to, analyze, and evaluate the speaker's effectiveness and content when listening to or viewing a variety of speeches and presentations.

L.CN.06.02➔ Students will listen to or view critically while demonstrating appropriate social skills of audience behaviors (e.g., eye contact, attentive, supportive); critically examine the verbal and non-verbal strategies during speeches and presentations.

Arts Education

None

7th Grade

Social Studies

K1.3→ Understand the diversity of human beings and human cultures.

Science

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

S.IP.07.11→ Generate scientific questions based on observations, investigations, and research.

S.RS.M.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.

S.RS.07.13→ Identify the need for evidence in making scientific decisions.

S.RS.07.14→ Evaluate scientific explanations based on current evidence and scientific principles.

S.RS.07.17→ Describe the effect humans and other organisms have on the balance of the natural world.

S.RS.07.19→ Describe how science and technology have advanced because of the contributions of many people throughout history and across cultures.

L.OL.M.6→ Photosynthesis- Plants are producers; they use the energy from light to make sugar molecules from the atoms of carbon dioxide and water. Plants use these sugars along with minerals from the soil to form fats, proteins, and carbohydrates. These products can be used immediately, incorporated into the cells of a plant as the plant grows, or stored for later use.

L.OL.07.61→ Recognize the need for light to provide energy for the production of carbohydrates, proteins and fats.

L.OL.07.63→ Describe evidence that plants make, use and store food.

E.ES.M.4→ Human Consequences- Human activities have changed the land, oceans, and atmosphere of the Earth resulting in the reduction of the number and variety of wild plants and animals, sometimes causing extinction of species.

E.ES.07.41→ Explain how human activities (surface mining, deforestation, overpopulation, construction and urban development, farming, dams, landfills, and restoring natural areas) change the surface of the Earth and affect the survival of organisms.

E.ES.M.8→ Water Cycle- Water circulates through the four spheres of the Earth in what is known as the “water cycle.”

E.ES.07.81→ Explain the water cycle and describe how evaporation, transpiration, condensation, cloud formation, precipitation, infiltration, surface runoff, ground water, and absorption occur within the cycle.

English Language Arts

L.CN.07.01→ Students will distinguish facts from opinions and question their validity when listening to or viewing a variety of speeches and presentations.

L.CN.07.02→ Students will listen to or view critically while demonstrating appropriate social skills of audience behaviors (e.g., eye contact, attentive, supportive); critically examine the verbal and non-verbal strategies during speeches and presentations.

Arts Education

None

8th Grade

Social Studies

K1.3→ Understand the diversity of human beings and human cultures.

Science

None

English Language Arts

L.CN.08.01→ Students will analyze main idea, significant details, fact and opinion, bias, propaganda, argumentation or support when listening to or viewing a variety of speeches and presentations.

L.CN.08.02→ Students will listen to or view critically while demonstrating appropriate social skills of audience behaviors (e.g., eye contact, attentive, supportive); critically examine the verbal and non-verbal strategies during speeches and presentations.

Arts Education

None

High School

Social Studies

K1.5→ Understand the diversity of human beings and human cultures.

Science

B1.1→ Scientific Inquiry-Science is a way of understanding nature.

Scientific research may begin by generating new scientific questions that can be answered through replicable scientific investigations that are logically developed and conducted systematically. Scientific conclusions and explanations result from careful analysis of empirical evidence and the use of logical reasoning. Some questions in science are addressed through indirect rather than direct observation, evaluating the consistency of new evidence with results predicted by models of natural processes. Results from investigations are communicated in reports that are scrutinized through a peer review process.

B1.1D→ Identify patterns in data and relate them to theoretical models.

B1.2→ Scientific Reflection and Social Implications- The integrity of the scientific process depends on scientists and citizens understanding and respecting the “Nature of Science.” Openness to new ideas, skepticism, and honesty are attributes required for good scientific practice. Scientists must use logical reasoning during investigation design, analysis, conclusion, and communication. Science can produce critical insights on societal problems from a personal and local scale to a global scale. Science both aids in the development of

technology and provides tools for assessing the costs, risks, and benefits of technological systems. Scientific conclusions and arguments play a role in personal choice and public policy decisions. New technology and scientific discoveries have had a major influence in shaping human history. Science and technology continue to offer diverse and significant career opportunities.

B1.2C→ Develop an understanding of a scientific concept by accessing information from multiple sources. Evaluate the scientific accuracy and significance of the information.

B2.3→ Maintaining Environmental Stability- The internal environment of living things must remain relatively constant. Many systems work together to maintain stability. Stability is challenged by changing physical, chemical, and environmental conditions as well as the presence of disease agents.

B2.3C→ Explain how stability is challenged by changing physical, chemical, and environmental conditions as well as the presence of disease agents.

B3.3→ Element Recombination- As matter cycles and energy flows through different levels of organization of living systems—cells, organs, organisms, and communities—and between living systems and the physical environment, chemical elements are recombined in different ways. Each recombination results in storage and dissipation of energy into the environment as heat. Matter and energy are conserved in each change.

B3.3A→ Use a food web to identify and distinguish producers, consumers, and decomposers and explain the transfer of energy through trophic levels.

B3.4→ Changes in Ecosystems- Although the interrelationships and interdependence of organisms may generate biological communities in ecosystems that are stable for hundreds or thousands of years, ecosystems always change when climate changes or when one or more new species appear as a result of migration or local evolution. The impact of the human species has major consequences for other species.

B3.4C→ Examine the negative impact of human activities.

B3.5→ Populations- Populations of living things increase and decrease in size as they interact with other populations and with the environment. The rate of change is dependent upon relative birth and death rates.
B3.5B→ Explain the influences that affect population growth.

English Language Arts

CE 2.1.10→ Listen to and view speeches, presentations, and multimedia works to identify and respond thoughtfully to key ideas, significant details, logical organization, fact and opinion, and propaganda.

CE 2.1.11→ Demonstrate appropriate social skills of audience, group discussion, or work team behavior by listening attentively and with civility to the ideas of others, gaining the floor in respectful ways, posing appropriate questions, and tolerating ambiguity and lack of consensus.

CE 2.1.12→ Use a variety of strategies to enhance listening comprehension (e.g., monitor message for clarity and understanding, ask relevant questions, provide verbal and nonverbal feedback, notice cues such as change of pace or emphasis that indicate a new point is about to be made; and take notes to organize essential information).

Arts Education

None