



Environmental Science

Michigan State High School Science Content Expectations

Course Description

This course will instruct students on the basic concepts of environmental science, including the scientific method, terrestrial and aquatic ecosystems, biomes of the world, trophic interactions, nutrient and chemical cycles, agriculture and integrated pest management, pollution and pollution management strategies, and environmental laws and policies.

Text Book

Arms, Karen. *Environmental Science*. Austin: Holt, Rinehart and Winston, 2004.

Unit 1 Description

This unit will cover the basics of ecological systems, the composition of the Earth, how energy and nutrients cycle through the world, and how populations grow, stabilize and crash.

Essential Content and Skills

The learner will:

- Learn how ecological systems function.
 - Learn how populations change and grow.
 - Learn about renewable and nonrenewable resources.
 - Learn about food webs, trophic levels, and nutrient cycles, and how humans have affected these processes.
 - Learn about endangered species and their protection in the United States and throughout the world.
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Unit 1 Michigan State Content Expectations

[Click here to view the Michigan DOE Curriculum Content Standards.](#)

Course Name - Part

Michigan State Curriculum Content Standards (continued)

Unit 1 Lesson 1: What is Environmental Science, Anyways?

State Standard	Description
E2.2B E2.4A E2.4B	Identify differences in the origin and use of renewable (e.g., solar, wind, water, biomass) and nonrenewable (e.g., fossil fuels, nuclear [U-235]) sources of energy. Describe renewable and nonrenewable sources of energy for human consumption (electricity, fuels), compare their effects on the environment, and include overall costs and benefits. Explain how the impact of human activities on the environment (e.g., deforestation, air pollution, coral reef destruction) can be understood through the analysis of interactions between the four Earth systems.

Unit 1 Lesson 2: What is Science?

State Standard	Description
E1.2h	Describe the distinctions between scientific theories, laws, hypotheses, and observations.

Unit 1 Lesson 3: The Music of the Spheres

State Standard	Description
E2.1B E2.2C E3.3A E4.p1A E4.p2A	Analyze the interactions between the major systems (geosphere, atmosphere, hydrosphere, biosphere) that make up the Earth. Describe natural processes in which heat transfer in the Earth occurs by conduction, convection, and radiation. Explain how plate tectonics accounts for the features and processes (sea floor spreading, mid-ocean ridges, subduction zones, earthquakes and volcanoes, mountain ranges) that occur on or near the Earth's surface. Describe that the water cycle includes evaporation, transpiration, condensation, precipitation, infiltration, surface runoff, groundwater, and absorption. (prerequisite) Describe the composition and layers of the atmosphere. (prerequisite)

Unit 1 Lesson 4: Ecosystems and Evolution

State Standard	Description
L2.p4A L3.p1A L3.p2A L3.p2B L3.p3B L3.p3C	Classify different organisms based on how they obtain energy for growth and development. (prerequisite) Provide examples of a population, community, and ecosystem. (prerequisite) Describe common relationships among organisms and provide examples of producer/consumer, predator/ prey, or parasite/host relationship. (prerequisite) Describe common ecological relationships between and among species and their environments (competition, territory, carrying capacity, natural balance, population, dependence, survival, and other biotic and abiotic factors). (prerequisite) Distinguish between the living (biotic) and nonliving (abiotic) components of an ecosystem. (prerequisite) Explain how biotic and abiotic factors cycle in an ecosystem (water, carbon, oxygen, and nitrogen). (prerequisite)

Course Name - Part

Michigan State Curriculum Content Standards (continued)

L3.p3D	Predict how changes in one population might affect other populations based upon their relationships in a food web. (prerequisite)
L5.p1A	Define a species and give examples. (prerequisite)
L5.p1B	Define a population and identify local populations. (prerequisite)
B5.1A	Summarize the major concepts of natural selection (differential survival and reproduction of chance inherited variants, depending on environmental conditions).
B5.B	Describe how natural selection provides a mechanism for evolution.

Unit 1 Lesson 5: Energy and Trophic Interactions

State Standard	Description
B3.1A	Describe how organisms acquire energy directly or indirectly from sunlight.
B3.1B	Illustrate and describe the energy conversions that occur during photosynthesis and respiration.
B3.1C	Recognize the equations for photosynthesis and respiration and identify the reactants and products for both.
B3.1D	Explain how living organisms gain and use mass through the processes of photosynthesis and respiration.
B3.1e	Write the chemical equation for photosynthesis and cellular respiration and explain in words what they mean.
B3.1f	Summarize the process of photosynthesis.
B3.2B	Describe energy transfer through an ecosystem, accounting for energy lost to the environment as heat.
B3.3A	Use a food web to identify and distinguish producers, consumers, and decomposers and explain the transfer of energy through trophic levels.

Unit 1 Lesson 6: Nutrient Cycles

State Standard	Description
B3.3b	Describe environmental processes (e.g., the carbon and nitrogen cycles) and their role in processing matter crucial for sustaining life.
E2.3A	Explain how carbon exists in different forms such as limestone (rock), carbon dioxide (gas), carbonic acid (water), and animals (life) within Earth systems and how those forms can be beneficial or harmful to humans.
E2.3c	Explain how the nitrogen cycle is part of the Earth system.
E2.3d	Explain how carbon moves through the Earth system (including the geosphere) and how it may benefit (e.g., improve soils for agriculture) or harm (e.g., act as a pollutant) society.

Unit 1 Lesson 7: Habitat, Species Interaction and Succession

State Standard	Description
B2.3.B	Describe how the maintenance of a relatively stable internal environment is required for the continuation of life.
B2.3.C	Explain how stability is challenged by changing physical, chemical, and environmental conditions as well as the presence of disease agents.
L3.p2A	Describe common relationships among organisms and provide examples of producer/consumer, predator/ prey, or parasite/host relationship. (prerequisite)
L3.p2B	Describe common ecological relationships between and among species and their environments (competition, territory, carrying capacity, natural balance, population, dependence, survival, and other biotic and abiotic factors). (prerequisite)
L3.p2D	Explain how two organisms can be mutually beneficial and how that can lead to interdependency. (prerequisite)

Course Name - Part

Michigan State Curriculum Content Standards (continued)

B3.4A	Describe ecosystem stability. Understand that if a disaster such as flood or fire occurs, the damaged ecosystem is likely to recover in stages of succession that eventually result in a system similar to the original one.
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Unit 1 Lesson 8: Population Ecology

State Standard	Description
L3.p3A	Identify the factors in an ecosystem that influence fluctuations in population size. (prerequisite)
L3.p3D	Predict how changes in one population might affect other populations based upon their relationships in a food web. (prerequisite)
L3.p4A	Recognize that, and describe how, human beings are part of Earth's ecosystems. Note that human activities can deliberately or inadvertently alter the equilibrium in ecosystems. (prerequisite)
B3.5A	Graph changes in population growth, given a data table.
B3.5B	Explain the influences that affect population growth.
B3.5e	Recognize that and describe how the physical or chemical environment may influence the rate, extent, and nature of population dynamics within ecosystems.
B3.5f	Graph an example of exponential growth. Then show the population leveling off at the carrying capacity of the environment.

Unit 1 Lesson 9: The Human Population

State Standard	Description
L3.p3A	Identify the factors in an ecosystem that influence fluctuations in population size. (prerequisite)
L3.p3D	Predict how changes in one population might affect other populations based upon their relationships in a food web. (prerequisite)
L3.p4A	Recognize that, and describe how, human beings are part of Earth's ecosystems. Note that human activities can deliberately or inadvertently alter the equilibrium in ecosystems. (prerequisite)
B3.5A	Graph changes in population growth, given a data table.
B3.5B	Explain the influences that affect population growth.
B3.5e	Recognize that and describe how the physical or chemical environment may influence the rate, extent, and nature of population dynamics within ecosystems.
B3.5f	Graph an example of exponential growth. Then show the population leveling off at the carrying capacity of the environment.

Unit 1 Lesson 10: Biodiversity and Endangered Species

State Standard	Description
L3.p4A	Recognize that, and describe how, human beings are part of Earth's ecosystems. Note that human activities can deliberately or inadvertently alter the equilibrium in ecosystems. (prerequisite)
B3.4B	Recognize and describe that a great diversity of species increases the chance that at least some living organisms will survive in the face of cataclysmic changes in the environment.
B3.4C	Examine the negative impact of human activities.
B3.5C	Predict the consequences of an invading organism on the survival of other organisms.
L5.p1C	Explain how extinction removes genes from the gene pool. (prerequisite)

Course Name - Part

Michigan State Curriculum Content Standards (continued)

Unit 2 Description

This unit will instruct the learner about the major terrestrial biomes of the Earth, the water cycle, the major freshwater and marine aquatic ecosystems of the world, and laws regulating human use of water resources.

Essential Content and Skills

The learner will:

- Learn the major terrestrial biomes.
- Learn how the hydrologic cycle functions.
- Learn how humans treat drinking water and wastewater.
- Learn about the major aquatic ecosystems, including streams, river, ponds and lakes, marine systems, and wetlands.
- Learn about watersheds and how watershed land use affects aquatic resources.
- Learn about the major laws regulating humans use of water.

Unit 2 Michigan State Content Expectations

Unit 2 Lesson 1: Born on the Biome

State Standard	Description
E2.1B	Analyze the interactions between the major systems (geosphere, atmosphere, hydrosphere, biosphere) that make up the Earth.
E2.1C	Explain, using specific examples, how a change in one system affects other Earth systems.

Unit 2 Lesson 2: Water, Water Everywhere

State Standard	Description
E4.p1A	Describe that the water cycle includes evaporation, transpiration, condensation, precipitation, infiltration, surface runoff, groundwater, and absorption. (prerequisite)
E4.p1B	Analyze the flow of water between the elements of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater. (prerequisite)
E4.p1C	Describe the river and stream types, features, and process including cycles of flooding, erosion, and deposition as they occur naturally and as they are impacted by land use decisions. (prerequisite)
E4.p1D	Explain the types, process, and beneficial functions of wetlands.

Course Name - Part

Michigan State Curriculum Content Standards (continued)

Unit 2 Lesson 3: Before the Tap and after the Toilet - Drinking Water and Wastewater Treatment

State Standard	Description
E4.p1A	Describe that the water cycle includes evaporation, transpiration, condensation, precipitation, infiltration, surface runoff, groundwater, and absorption. (prerequisite) Analyze the flow of water between the elements of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater. (prerequisite) Describe the river and stream types, features, and process including cycles of flooding, erosion, and deposition as they occur naturally and as they are impacted by land use decisions. (prerequisite)
E4.p1B	
E4.p1C	

Unit 2 Lesson 4: Water Pollution and Human Impacts on Water Resources

State Standard	Description
E4.p1A	Describe that the water cycle includes evaporation, transpiration, condensation, precipitation, infiltration, surface runoff, groundwater, and absorption. (prerequisite) Analyze the flow of water between the elements of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater. (prerequisite) Describe the river and stream types, features, and process including cycles of flooding, erosion, and deposition as they occur naturally and as they are impacted by land use decisions. (prerequisite)
E4.p1B	
E4.p1C	
E4.p1D	Explain the types, process, and beneficial functions of wetlands.
E4.1A	Compare and contrast surface water systems (lakes, rivers, streams, wetlands) and groundwater in regard to their relative sizes as Earth's freshwater reservoirs and the dynamics of water movement (inputs and outputs, residence times, sustainability).
E4.1B	Explain the features and processes of groundwater systems and how the sustainability of North American aquifers has changed in recent history (e.g., the past 100 years) qualitatively using the concepts of recharge, residence time, inputs, and outputs.
E4.1C	Explain how water quality in both groundwater and surface systems is impacted by land use decisions.

Unit 2 Lesson 5: Freshwater Lakes and Wetlands

State Standard	Description
E4.p1A	Describe that the water cycle includes evaporation, transpiration, condensation, precipitation, infiltration, surface runoff, groundwater, and absorption. (prerequisite) Analyze the flow of water between the elements of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater. (prerequisite) Describe the river and stream types, features, and process including cycles of flooding, erosion, and deposition as they occur naturally and as they are impacted by land use decisions. (prerequisite)
E4.p1B	
E4.p1C	
E4.p1D	Explain the types, process, and beneficial functions of wetlands.
E4.1A	Compare and contrast surface water systems (lakes, rivers, streams, wetlands) and groundwater in regard to their relative sizes as Earth's freshwater reservoirs and the dynamics of water movement (inputs and outputs, residence times, sustainability).
E4.1B	Explain the features and processes of groundwater systems and how the sustainability of North American aquifers has changed in recent history (e.g., the past 100 years) qualitatively using the concepts of recharge, residence time, inputs, and outputs.
E4.1C	Explain how water quality in both groundwater and surface systems is impacted by land use decisions.

Course Name - Part

Michigan State Curriculum Content Standards (continued)

Unit 2 Lesson 6: Streams and Rivers

State Standard	Description
E4.p1A	Describe that the water cycle includes evaporation, transpiration, condensation, precipitation, infiltration, surface runoff, groundwater, and absorption. (prerequisite)
E4.p1B	
E4.p1C	Analyze the flow of water between the elements of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater. (prerequisite)
E4.p1D	Describe the river and stream types, features, and process including cycles of flooding, erosion, and deposition as they occur naturally and as they are impacted by land use decisions. (prerequisite)
E4.1A	
E4.1B	Explain the types, process, and beneficial functions of wetlands.
E4.1C	Compare and contrast surface water systems (lakes, rivers, streams, wetlands) and groundwater in regard to their relative sizes as Earth's freshwater reservoirs and the dynamics of water movement (inputs and outputs, residence times, sustainability).
	Explain the features and processes of groundwater systems and how the sustainability of North American aquifers has changed in recent history (e.g., the past 100 years) qualitatively using the concepts of recharge, residence time, inputs, and outputs.
	Explain how water quality in both groundwater and surface systems is impacted by land use decisions.

Unit 2 Lesson 7: Watersheds

State Standard	Description
E4.p1A	Describe that the water cycle includes evaporation, transpiration, condensation, precipitation, infiltration, surface runoff, groundwater, and absorption. (prerequisite)
E4.p1B	
E4.p1C	Analyze the flow of water between the elements of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater. (prerequisite)
E4.p1D	Describe the river and stream types, features, and process including cycles of flooding, erosion, and deposition as they occur naturally and as they are impacted by land use decisions. (prerequisite)
E4.1A	
E4.1B	Explain the types, process, and beneficial functions of wetlands.
E4.1C	Compare and contrast surface water systems (lakes, rivers, streams, wetlands) and groundwater in regard to their relative sizes as Earth's freshwater reservoirs and the dynamics of water movement (inputs and outputs, residence times, sustainability).
	Explain the features and processes of groundwater systems and how the sustainability of North American aquifers has changed in recent history (e.g., the past 100 years) qualitatively using the concepts of recharge, residence time, inputs, and outputs.
	Explain how water quality in both groundwater and surface systems is impacted by land use decisions.

Unit 2 Lesson 8: Evaluating Your Watershed

State Standard	Description
E4.p1A	Describe that the water cycle includes evaporation, transpiration, condensation, precipitation, infiltration, surface runoff, groundwater, and absorption. (prerequisite)
E4.p1B	
E4.p1C	Analyze the flow of water between the elements of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater. (prerequisite)
E4.p1D	Describe the river and stream types, features, and process including cycles of flooding, erosion, and deposition as they occur naturally and as they are impacted by land use decisions. (prerequisite)
E4.1A	
	Explain the types, process, and beneficial functions of wetlands.
	Compare and contrast surface water systems (lakes, rivers, streams, wetlands) and groundwater in regard to their relative sizes as Earth's freshwater reservoirs and the

Course Name - Part

Michigan State Curriculum Content Standards (continued)

E4.1B	dynamics of water movement (inputs and outputs, residence times, sustainability). Explain the features and processes of groundwater systems and how the sustainability of North American aquifers has changed in recent history (e.g., the past 100 years) qualitatively using the concepts of recharge, residence time, inputs, and outputs.
E4.1C	Explain how water quality in both groundwater and surface systems is impacted by land use decisions.

Unit 2 Lesson 9: Marine Ecosystems

State Standard	Description
E4.2A	Describe the major causes for the ocean's surface and deep water currents, including the prevailing winds, the Coriolis effect, unequal heating of the earth, changes in water temperature and salinity in high latitudes, and basin shape.

Unit 2 Lesson 10: Laws Regulating Water

State Standard	Description
E4.1B	Explain the features and processes of groundwater systems and how the sustainability of North American aquifers has changed in recent history (e.g., the past 100 years) qualitatively using the concepts of recharge, residence time, inputs, and outputs.
E4.1C	Explain how water quality in both groundwater and surface systems is impacted by land use decisions.

Course Name - Part

Michigan State Curriculum Content Standards (continued)

Unit 3 Description

This unit will cover human uses of energy, renewable and nonrenewable resources, air pollution from human activities, ozone depletion, and global climate change.

Essential Content and Skills

The learner will:

- Learn the major human uses of energy.
- Learn about renewable and nonrenewable resources.
- Learn how fossil fuels form, and the major uses, advantages and drawbacks of each.
- Learn about the advantages and disadvantages of nuclear power.
- Learn about renewable and alternative energy sources, including solar, hydroelectric, wind, and geothermal energy.
- Learn about primary and secondary air pollution.
- Learn about global warming and ozone depletion.
- Learn about hybrid vehicles and hydrogen fuel cells.

Unit 3 Michigan State Content Expectations

Unit 3 Lesson 1: Basic Energy Concepts and Human Energy Sources

State Standard	Description
E2.2B E2.2e E2.4A	Identify differences in the origin and use of renewable (e.g., solar, wind, water, biomass) and nonrenewable (e.g., fossil fuels, nuclear [U-235]) sources of energy. Explain how energy changes form through Earth systems. Describe renewable and nonrenewable sources of energy for human consumption (electricity, fuels), compare their effects on the environment, and include overall costs and benefits.

Unit 3 Lesson 2: Fossil Fuels

State Standard	Description
E2.2B E2.2e E2.4A	Identify differences in the origin and use of renewable (e.g., solar, wind, water, biomass) and nonrenewable (e.g., fossil fuels, nuclear [U-235]) sources of energy. Explain how energy changes form through Earth systems. Describe renewable and nonrenewable sources of energy for human consumption (electricity, fuels), compare their effects on the environment, and include overall costs and benefits.

Unit 3 Lesson 3: Electricity and Energy Use in the U.S.

State Standard	Description
E2.2B E2.2e E2.4A	Identify differences in the origin and use of renewable (e.g., solar, wind, water, biomass) and nonrenewable (e.g., fossil fuels, nuclear [U-235]) sources of energy. Explain how energy changes form through Earth systems. Describe renewable and nonrenewable sources of energy for human consumption (electricity, fuels), compare their effects on the environment, and include overall costs and benefits.

Course Name - Part

Michigan State Curriculum Content Standards (continued)

Unit 3 Lesson 4: Nuclear Energy

State Standard	Description
E2.2B E2.2e E2.4A	Identify differences in the origin and use of renewable (e.g., solar, wind, water, biomass) and nonrenewable (e.g., fossil fuels, nuclear [U-235]) sources of energy. Explain how energy changes form through Earth systems. Describe renewable and nonrenewable sources of energy for human consumption (electricity, fuels), compare their effects on the environment, and include overall costs and benefits.

Unit 3 Lesson 5: Renewable and Alternative Energy Sources

State Standard	Description
E2.2B E2.2e E2.4A	Identify differences in the origin and use of renewable (e.g., solar, wind, water, biomass) and nonrenewable (e.g., fossil fuels, nuclear [U-235]) sources of energy. Explain how energy changes form through Earth systems. Describe renewable and nonrenewable sources of energy for human consumption (electricity, fuels), compare their effects on the environment, and include overall costs and benefits.

Unit 3 Lesson 6: Air Pollution, Part 1

State Standard	Description
E2.3b	Explain why small amounts of some chemical forms may be beneficial for life but are poisonous in large quantities (e.g., dead zone in the Gulf of Mexico, Lake Nyos in Africa, fluoride in drinking water).
E2.3d	Explain how carbon moves through the Earth system (including the geosphere) and how it may benefit (e.g., improve soils for agriculture) or harm (e.g., act as a pollutant) society.
E2.4B	Explain how the impact of human activities on the environment (e.g., deforestation, air pollution, coral reef destruction) can be understood through the analysis of interactions between the four Earth systems.

Unit 3 Lesson 7: Air Pollution, Part 2

State Standard	Description
E2.3b	Explain why small amounts of some chemical forms may be beneficial for life but are poisonous in large quantities (e.g., dead zone in the Gulf of Mexico, Lake Nyos in Africa, fluoride in drinking water).
E2.3d	Explain how carbon moves through the Earth system (including the geosphere) and how it may benefit (e.g., improve soils for agriculture) or harm (e.g., act as a pollutant) society.
E2.4B	Explain how the impact of human activities on the environment (e.g., deforestation, air pollution, coral reef destruction) can be understood through the analysis of interactions between the four Earth systems.

Unit 3 Lesson 8: Global Climate Change

State Standard	Description
E4.p2B	Describe the difference between weather and climate. (prerequisite)
E4.p2H	Explain the primary causes of seasons. (prerequisite)
E4.p2I	Identify major global wind belts (trade winds, prevailing westerlies, and polar easterlies) and that their vertical components control the global distribution of rainforests and deserts. (prerequisite)

Course Name - Part

Michigan State Curriculum Content Standards (continued)

E4.2B	Explain how interactions between the oceans and the atmosphere influence global and regional climate. Include the major concepts of heat transfer by ocean currents, thermohaline circulation, boundary currents, evaporation, precipitation, climatic zones, and the ocean as a major CO ₂ reservoir.
E4.2c	Explain the dynamics (including ocean-atmosphere interactions) of the El Niño-Southern Oscillation (ENSO) and its effect on continental climates.
E5.4A	Explain the natural mechanism of the greenhouse effect, including comparisons of the major greenhouse gases (water vapor, carbon dioxide, methane, nitrous oxide, and ozone).
E5.4B	Describe natural mechanisms that could result in significant changes in climate (e.g., major volcanic eruptions, changes in sunlight received by the earth, and meteorite impacts).
E5.4C	Analyze the empirical relationship between the emissions of carbon dioxide, atmospheric carbon dioxide levels, and the average global temperature over the past 150 years.
E5.4D	Based on evidence of observable changes in recent history and climate change models, explain the consequences of warmer oceans (including the results of increased evaporation, shoreline and estuarine impacts, oceanic algae growth, and coral bleaching) and changing climatic zones (including the adaptive capacity of the biosphere).
E5.4e	Based on evidence from historical climate research (e.g. fossils, varves, ice core data) and climate change models, explain how the current melting of polar ice caps can impact the climatic system .
E5.4f	Describe geologic evidence that implies climates were significantly colder at times in the geologic record (e.g., geomorphology, striations, and fossils).
E5.4g	Compare and contrast the heat-trapping mechanisms of the major greenhouse gases resulting from emissions (carbon dioxide, methane, nitrous oxide, fluorocarbons) as well as their abundance and heat-trapping capacity.
B3.4d	Describe the greenhouse effect and list possible causes.
B3.4e	List the possible causes and consequences of global warming.

Unit 3 Lesson 9: The Ozone Layer

State Standard	Description
E2.4c	Explain ozone depletion in the stratosphere and methods to slow human activities to reduce ozone depletion.

Unit 3 Lesson 10: Hybrid Cars and Hydrogen Fuel Cells

State Standard	Description
E2.4A	Describe renewable and nonrenewable sources of energy for human consumption (electricity, fuels), compare their effects on the environment, and include overall costs and benefits.

Course Name - Part

Michigan State Curriculum Content Standards (continued)

Unit 4 Description

This unit will instruct the learner about the various ways humans use land, including agricultural land uses, mining, and the use of land for solid waste disposal. In addition, this unit will cover the topics of recycling, soil properties, and environmental laws and policies.

Essential Content and Skills

The learner will:

- Learn how humans use land.
- Learn the components and characteristics of soil.
- Learn about agricultural practices throughout Pennsylvania and the United States.
- Learn about integrated pest management.
- Learn the components of a sanitary landfill.
- Learn how environmental regulations are enacted, interpreted, and enforced in the United States.

Unit 4 Michigan State Academic Content Expectations

Unit 4 Lesson 1: How We Use Land

State Standard	Description
E3.p1A	Explain the origin of Michigan landforms. Describe and identify surface features using maps and satellite images. (prerequisite)

Unit 4 Lesson 2: Soil

State Standard	Description
E3.p1B	Explain how physical and chemical weathering leads to erosion and the formation of soils and sediments. (prerequisite)

Unit 4 Lesson 3: Agriculture, Part 1

State Standard	Description
E3.p1B	Explain how physical and chemical weathering leads to erosion and the formation of soils and sediments. (prerequisite)

Unit 4 Lesson 4: Agriculture, Part 2: Agriculture in Pennsylvania

State Standard	Description
E3.p1B	Explain how physical and chemical weathering leads to erosion and the formation of soils and sediments. (prerequisite)

Unit 4 Lesson 5: Soil Conservation, Nutrient Management and Integrated Pest Management

State Standard	Description
E3.p1B	Explain how physical and chemical weathering leads to erosion and the formation of soils and sediments. (prerequisite)

Course Name - Part

Michigan State Curriculum Content Standards (continued)

Unit 4 Lesson 6: Mining

State Standard	Description
E1.2k	Analyze how science and society interact from a historical, political, economic, or social perspective.

Unit 4 Lesson 7: Solid Waste

State Standard	Description
E1.2k	Analyze how science and society interact from a historical, political, economic, or social perspective.

Unit 4 Lesson 8: Solid Waste, Part 2: Recycling, Composting and Source Reduction

State Standard	Description
E1.2k	Analyze how science and society interact from a historical, political, economic, or social perspective.

Unit 4 Lesson 9: Environmental Health Issues

State Standard	Description
E2.4B	Explain how the impact of human activities on the environment (e.g., deforestation, air pollution, coral reef destruction) can be understood through the analysis of interactions between the four Earth systems.
B2.3B	Describe how the maintenance of a relatively stable internal environment is required for the continuation of life.
B2.3C	Explain how stability is challenged by changing physical, chemical, and environmental conditions as well as the presence of disease agents.

Unit 4 Lesson 10: Environmental Policy and the Future

State Standard	Description
E2.4B	Explain how the impact of human activities on the environment (e.g., deforestation, air pollution, coral reef destruction) can be understood through the analysis of interactions between the four Earth systems.
B2.3B	Describe how the maintenance of a relatively stable internal environment is required for the continuation of life.
B2.3C	Explain how stability is challenged by changing physical, chemical, and environmental conditions as well as the presence of disease agents.