CURRICULUM CONNECTIONS

Outdoor Living Lab Tour
(http://www.thehenryford.org/events/outdoorLivingLab.aspx)

Facilitated Activity at Ford Rouge Factory Tour. Step outside the Rouge and see how the ecosystem of this industrial setting, including soil, water, and air, has been transformed through sustainable design.

Michigan Science Grade Level Content Expectations

Grade 1
E.ES.01.11   Identify the sun as the most important source of heat which warms the land, air, and water of the Earth.

Grade 2
E.FE.02.21   Describe how rain collects on the surface of the Earth and flows downhill into bodies of water (streams, rivers, lakes, oceans) or into the ground.

E.FE.02.22   Describe the major bodies of water on the Earth's surface (lakes, ponds, oceans, rivers, streams).

Grade 3
E.ES.03.41   Identify natural resources (metals, fuels, fresh water, fertile soil, and forests).

E.ES.03.43   Describe ways humans are protecting, extending, and restoring resources (recycle, reuse, reduce, renewal).

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.ES.03.52   Describe helpful or harmful effects of humans on the environment (garbage, habitat destruction, land management, renewable, and non-renewable resources).

Grade 4
L.EC.04.21   Explain how environmental changes can produce a change in the food web.

Grade 5
L.EV.05.11   Explain how behavioral characteristics (adaptation, instinct, learning, habit) of animals help them to survive in their environment.

Grade 6
L.EC.06.11   Identify and describe examples of populations, communities, and ecosystems including the Great Lakes region.

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.

L.EC.06.42   Predict possible consequences of overpopulation of organisms, including humans, (for example: species extinction, resource depletion, climate change, pollution).

Grade 7

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.07.42   Describe the origins of pollution in the atmosphere, geosphere, and hydrosphere, (car exhaust, industrial emissions, acid rain, and natural sources), and how pollution impacts habitats, climatic change, threatens or endangers species.

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.

E.ES.07.82   Analyze the flow of water between the components of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater.

Michigan Science High School Content Expectations

Biology

L3.p3A   Identify the factors in an ecosystem that influence fluctuations in population size.

L3.p3B   Distinguish between the living (biotic) and nonliving (abiotic) components of an ecosystem.

L3.p3C   Explain how biotic and abiotic factors cycle in an ecosystem (water, carbon, oxygen, and nitrogen).

L3.p3D   Predict how changes in one population might affect other populations based upon their relationships in a food web.

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.

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.

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

B3.5d   Describe different reproductive strategies employed by various organisms and explain their advantages and disadvantages.

B3.5e   Recognize that and describe how the physical or chemical environment may influence the rate, extent, and nature of population dynamics within ecosystems.

Earth Science

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.

E4.p1A   Describe that the water cycle includes evaporation, transpiration, condensation, precipitation, infiltration, surface runoff, groundwater, and absorption.

E4.p1B   Analyze the flow of water between the elements of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater.
E4.p1D   Explain the types, process, and beneficial functions of wetlands.
E4.1C   Explain how water quality in both groundwater and surface systems is impacted by land use decisions.

National Science Education Standards

Strands
History and Nature of Science
Science and Technology
Science in Personal and Social Perspectives
Life Science
Science as Inquiry