

Instructions for Teachers/Chaperone

Self-guided Sanctuary Scavenger Hunts

These self-guided 'scavenger hunts' should help students and leaders to explore the Sanctuary. The questions were developed with the MI Grade Level Content Expectations in mind so they should help with classroom learning.

Instructions

When you arrive at the Sanctuary, the teachers/leaders will check in with Sanctuary staff in the Bookstore/Resource Center.

For early elementary groups each chaperone/leader/teacher will receive:

A clipboard, dry-erase marker and laminated "Can you find?" sheet.

All materials should be returned to the Sanctuary Resource Center/Bookstore upon completion.

For middle school groups students will work in pairs. Each pair of students will receive:

A clipboard, pencil, laminated "Scientific Scavenger Hunt" and Answer Sheet. All materials except the Answer Sheet should be returned to the Sanctuary Resource Center/Bookstore upon completion.

A copy of the correct answers to the "Scientific Scavenger Hunt" will be given to the teacher/s upon arrival.

Michigan Grade Level Content Expectations Met Through This Activity

5th – 7th grade:

L.OL.E.1 Life Requirements- Organisms have basic needs. Animals and plants need air, water, and food. Plants also require light. Plants and animals use food as a source of energy and as a source of building material for growth and repair.

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

L.OL.M.4 Animal Systems- Multi-cellular organisms may have specialized systems that perform functions which serve the needs of the organism.

L.EV.M.1 Species Adaptation and Survival- Species with certain traits are more likely than others to survive and have offspring in particular environments. When an environment changes, the advantage or disadvantage of the species' characteristics can change. Extinction of a species occurs when the environment changes and the characteristics of a species are insufficient to allow survival.

L.EV.M.2 Relationships Among Organisms- Similarities among organisms are found in anatomical features, which can be used to infer the degree of relatedness among organisms. In classifying organisms, biologists consider details of internal and external structures to be more important than behavior or general appearance

8th-High School

B3: I INTERDEPENDENCE OF LIVING SYSTEMS AND THE ENVIRONMENT

Students describe the processes of photosynthesis and cellular respiration and how energy is transferred through food webs. They recognize and analyze the consequences of the dependence of organisms on environmental resources and the interdependence of organisms in ecosystems.

B3.2 Ecosystems

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The chemical elements that make up the molecules of living things pass through food webs and are combined and recombined in different ways. At each link in an ecosystem, some energy is stored in newly made structures, but much is dissipated into the environment as heat. Continual input of energy from sunlight keeps the process going.

B3.2A

Identify how energy is stored in an ecosystem.

B3.2B

Describe energy transfer through an ecosystem, accounting for energy lost to the environment as heat.

B3.2C

Draw the flow of energy through an ecosystem. Predict changes in the food web when one or more organisms are removed

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.

B3.5A

Graph changes in population growth, given a data table.

B3.5B

Explain the influences that affect population growth.

B3.5C

Predict the consequences of an invading organism on the survival of other organisms

B5: EVOLUTION AND BIODIVERSITY

Students recognize that evolution is the result of genetic changes that occur in constantly changing environments. They can explain that modern evolution includes both the concepts of common descent and natural selection. They illustrate how the consequences of natural selection and differential reproduction have led to the great biodiversity on Earth.

B5.1 Theory of Evolution

The theory of evolution provides a scientific explanation for the history of life on Earth as depicted in the fossil record and in the similarities evident within the diversity of existing organisms.

B5.1A

Summarize the major concepts of natural selection (differential survival and reproduction of chance inherited variants, depending on environmental conditions).

B5.1B

Describe how natural selection provides a mechanism for evolution.

B5.3

Natural Selection

Evolution is the consequence of natural selection, the interactions of (1) the potential for a population to increase its numbers, (2) the genetic variability of offspring due to mutation and recombination of genes, (3) a finite supply of the resources required for life, and (4) the ensuing selection from environmental pressure of those organisms better able to survive and leave offspring.

B5.3A

Explain how natural selection acts on individuals, but it is populations that evolve. Relate genetic mutations and genetic variety produced by sexual reproduction to diversity within a given population.

B5.3B

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Describe the role of geographic isolation in speciation.

B4.3C

Give examples of ways in which genetic variation and environmental factors are causes of evolution and the diversity of organisms.