

Organization for Bat Conservation Programs 2012

| GLCE Code           | Grade Level Expectations Addressed   | Bats of the World | Animal Adaptation | Biodiversity Live! | Basically Bats | Creature Coverings | Bat Zone Tour |
|---------------------|--|-------------------|-------------------|--------------------|----------------|--------------------|---------------|
| <b>Kindergarten</b> |  |                   |                   |                    |                |                    |               |
| G1.0.2              | Use environmental directions or positional words to identify significant locations in the classroom.   |                   |                   |                    |                | X                  |               |
| R.W.S.00.10         | In context, determine the meaning of a few words, familiar and repeated phrases including objects, actions, concepts, content vocabulary and literary terms using strategies and resources including picture clues, prediction and other people. |                   |                   |                    |                | X                  |               |
| M.UN.00.04          | Compare two or more objects by length, weight and capacity.  |                   |                   |                    | X              | X                  | X             |
| M.PS.00.05          | Compare length and weight of objects by comparing to reference objects and use terms such as shorter, longer, taller, lighter and heavier.   |                   |                   |                    | X              | X                  | X             |
| S.IP.00.11          | Make purposeful observation of the natural world using the appropriate senses.   |                   |                   |                    | X              | X                  | X             |
| S.IP.00.12          | Generate questions based on observations.  |                   |                   |                    | X              | X                  | X             |
| S.IA.00.12          | Share ideas about science through purposeful conversation.   |                   |                   |                    |                | X                  | X             |
| <b>First Grade</b>  |  |                   |                   |                    |                |                    |               |
| R.WS.01.02          | Recognize that words are composed of sounds blended together to carry meaning.   |                   |                   |                    |                | X                  |               |
| G5.01               | Describe ways in which people modify and adapt to the environment.   |                   |                   |                    |                | X                  |               |
| S.IP.01.11          | Make purposeful observation of the natural world using the appropriate senses.   |                   |                   |                    | X              | X                  | X             |
| S.IP.01.12          | Generate questions based on observations.  |                   |                   |                    | X              | X                  | X             |
| S.IA.01.12          | Share ideas about science through purposeful conversation.   |                   |                   |                    | X              | X                  | X             |
| L.OL.01.13          | Identify the needs of animals.   |                   |                   |                    | X              | X                  | X             |
| L.OL.01.21          | Describe the life cycle of animals including the following stages: egg, young, adult: egg, larva, pupa, adult.   |                   |                   |                    |                | X                  |               |
| E.ES.01.12          | Demonstrate the importance of sunlight and warmth in plant growth.   |                   |                   |                    | X              |                    |               |
| <b>Second Grade</b> |  |                   |                   |                    |                |                    |               |
| G5.0.1              | Suggests way people can responsibly interact with the environment in the local community   | X                 | X                 |                    |                |                    | X             |
| S.IP.02.11          | Make purposeful observation of the natural world using the appropriate senses  | X                 | X                 |                    |                |                    | X             |

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| <b>Second Grade continued</b> |   |                   |                   |                    |                |                    |               |
| S.IP.02.12                    | Generate questions based on observations.   | X                 | X                 |                    |                |                    | X             |
| S.IA.02.12                    | Share ideas about science through purposeful conversation.  | X                 | X                 |                    |                |                    | X             |
| L.OL.02.22                    | Describe the life cycle of familiar flowering plants including the following stages: seed, plant, flower and fruit.               | X                 |                   |                    |                |                    |               |
| <b>Third Grade</b>            |   |                   |                   |                    |                |                    |               |
| G5.0.1                        | Locate natural resources in Michigan and explain the consequences of their use.   |                   |                   | X                  |                |                    |               |
| G5.0.2                        | Describe how people adapt to, use and modify the natural resources of Michigan.   |                   | X                 | X                  |                |                    |               |
| S.IP.03.11                    | Make purposeful observation of the natural world using the appropriate senses   | X                 | X                 | X                  |                |                    | X             |
| S.IP.03.12                    | Generate questions based on observations.   | X                 | X                 | X                  |                |                    | X             |
| S.RS.03.18                    | Describe the effect humans and other organisms have on the balance of the natural world.  | X                 | X                 | X                  |                |                    | X             |
| S.RS.03.17                    | Identify current problems that may be solved through the use of technology.   |                   |                   | X                  |                |                    |               |
| L.OL.03.32                    | Identify and compare structures in animals used for controlling body temperature, support, movement, food-getting and protection. | X                 | X                 |                    |                |                    | X             |
| L.OL.03.42                    | Classify animals on basis of observable physical characteristics.   | X                 | X                 | X                  |                |                    | X             |
| L.OL.03.11                    | Relate characteristics and functions of observable parts in a variety of plants that allow them to live in their environment.     |                   |                   | X                  |                |                    |               |
| L.EV.03.12                    | Relate characteristics and functions of observable body parts to the ability of animals to live in their environment.             | X                 | X                 | X                  |                |                    | X             |
| E.ES.03.41                    | Identify natural resources.   |                   |                   | X                  |                |                    |               |
| E.ES.03.42                    | Classify renewable and non-renewable resources.   |                   |                   | X                  |                |                    |               |
| E.ES.03.43                    | Describe ways humans are protecting, extending and restoring resources.   | X                 |                   | X                  |                |                    | X             |
| E.ES.03.51                    | Describe ways humans are dependent on the natural environment and constructed environments.                                       |                   | X                 | X                  |                |                    |               |
| E.ES.03.52                    | Describe helpful or harmful effects of humans on the environment.   | X                 |                   | X                  |                |                    | X             |
| P.EN. 03.31                   | Relate sounds to their sources of vibrations.   | X                 |                   |                    |                |                    |               |

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| <b>Fourth Grade</b> |   |                   |                   |                    |                |                    |               |
| S.IP.04.12          | Generate questions based on observations.   | X                 | X                 | X                  |                |                    | X             |
| S.RS.04.18          | Describe the effect humans and other organisms have on the balance of the natural world.  | X                 |                   | X                  |                |                    | X             |
| L.OL.04.15          | Determine that plants require air, water, light and a source of energy and building material for growth and repair.               |                   |                   | X                  |                |                    |               |
| L.OL.04.16          | Determine that animals require air, water and a source of energy and building material for growth and repair.                     |                   | X                 | X                  |                |                    |               |
| L.EV.04.21          | Identify individual differences in organisms of the same kind.  | X                 | X                 | X                  |                |                    | X             |
| L.EV.04.22          | Identify how variations in physical characteristics of individual organisms give them an advantage for survival and reproduction. | X                 | X                 | X                  |                |                    |               |
| L.EC.04.11          | Identify organisms as part of a food chain or food web.   | X                 | X                 | X                  |                |                    | X             |
| L.EC.04.21          | Explain how environmental changes can produce a change in the food web.   |                   |                   | X                  |                |                    |               |
| <b>Fifth Grade</b>  |   |                   |                   |                    |                |                    |               |
| S.IP.05.11          | Generate scientific questions based on observations, investigations, and research.  | X                 | X                 | X                  |                |                    | X             |
| S.IA.05.12          | Evaluate data, claims, and personal knowledge through collaborative science discourse.  |                   |                   | X                  |                |                    |               |
| S.RS.05.17          | Describe the effect humans and other organisms have on the balance in the natural world.  | X                 |                   | X                  |                |                    | X             |
| L.HE.05.11          | Explain that the traits of an individual are influenced by both the environment and the genetics of the individual.               |                   | X                 |                    |                |                    | X             |
| L.OL.05.41          | Identify the general purpose of selected animal systems.  |                   | X                 |                    |                |                    |               |
| L.OL.05.42          | Explain how animal systems work together to perform selected activities.  | X                 | X                 |                    |                |                    |               |
| L.EV.05.11          | Explain how behavioral characteristics of animals help them to survive in their environment.                                      | X                 | X                 | X                  |                |                    | X             |
| L.EV.05.12          | Describe the physical characteristics of organisms that help them survive in their environment.                                   | X                 | X                 | X                  |                |                    | X             |
| L.EV.05.13          | Describe how fossils provide evidence about how living things and environmental conditions have changed.                          |                   |                   | X                  |                |                    |               |
| L.EV.05.14          | Analyze the relationship of environmental change and catastrophic events to species extinction.                                   |                   |                   | X                  |                |                    |               |

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| <b>Fifth Grade Continued</b> |  |                   |                   |                    |                |                    |               |
| L.EV.05.21                   | Relate degree of similarity in anatomical features to the classification of contemporary organisms.  | X                 |                   | X                  |                |                    | X             |
| <b>Sixth Grade</b>           |  |                   |                   |                    |                |                    |               |
| S.IP.06.11                   | Generate scientific questions based on observations, investigations and research   | X                 | X                 | X                  |                |                    | X             |
| S.IP.06.12                   | Evaluate data, claims, and personal knowledge through collaborative science discourse.   |                   |                   | X                  |                |                    |               |
| S.RS.06.17                   | Describe the effect humans and other organisms have on the balance of the natural world.   | X                 |                   |                    |                |                    | X             |
| L.EC.06.11                   | Identify and describe examples of populations, communities, and ecosystems including the Great Lakes region.   | X                 | X                 | X                  |                |                    |               |
| L.EC.06.21                   | Describe common patterns of relationships between and among populations (competition, parasitism, symbiosis, predator/prey).                                     | X                 |                   | X                  |                |                    | X             |
| L.EC.06.22                   | Explain how two populations of organisms can be mutually beneficial and how that can lead to interdependency.  | X                 |                   | X                  |                |                    | X             |
| L.EC.06.23                   | Predict how changes in one population might affect other populations based upon their relationships in the food web.   | X                 |                   | X                  |                |                    | X             |
| L.EC.06.31                   | Identify the living (biotic) and nonliving (abiotic) components of an ecosystem.   |                   |                   | X                  |                |                    |               |
| L.EC.06.32                   | Identify the factors in an ecosystem that influence changes in population size.  |                   |                   | X                  |                |                    |               |
| 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.     | X                 | X                 | X                  |                |                    | X             |
| L.EC.06.42                   | Predict possible consequences of overpopulation of organisms, including humans, (for example: species extinction, resource depletion, climate change, pollution) |                   | X                 | X                  |                |                    |               |
| <b>Seventh Grade</b>         |  |                   |                   |                    |                |                    |               |
| S.IP.07.11                   | Generate scientific questions based on observations, investigations, and research.   | X                 | X                 | X                  |                |                    | X             |
| S.RS.07.17                   | Describe the effect humans and other organisms have on the balance of the natural world.   | X                 |                   | X                  |                |                    | X             |
| P.EN.07.31                   | Identify examples of waves, including sound waves, seismic waves, and waves on water.  | X                 | X                 |                    |                |                    |               |

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| <b>Seventh Grade Continued</b> |   |                   |                   |                    |                |                    |               |
| P.EN.07.32                     | Describe how waves are produced by vibrations in matter.  | X                 | X                 |                    |                |                    | X             |
| P.EN.07.33                     | Demonstrate how waves transfer energy when they interact with matter (for example: tuning fork in water, waves hitting a beach, earthquake knocking over buildings).  | X                 | X                 |                    |                |                    |               |
| 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. |                   | X                 | X                  |                |                    |               |
| 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.    | X                 | X                 | X                  |                |                    |               |
| <b>Eighth Grade</b>            |   |                   |                   |                    |                |                    |               |
| L3.p1A                         | Provide examples of a population, community, and ecosystem.   |                   |                   | X                  |                |                    |               |
| 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).               | X                 | X                 | X                  |                |                    | X             |
| L3.p2D                         | Explain how two organisms can be mutually beneficial and how that can lead to interdependency.  | X                 |                   | X                  |                |                    |               |
| L3.p3A                         | Describe common relationships among organisms and provide examples of producer/consumer, predator/prey, or parasite/host relationship.  |                   |                   | X                  |                |                    |               |
| L3.p3B                         | 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).               |                   |                   | X                  |                |                    |               |
| L3.p3D                         | Explain how two organisms can be mutually beneficial and how that can lead to interdependency.  |                   |                   | X                  |                |                    |               |
| 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.  | X                 |                   | X                  |                |                    | X             |

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| <b>Eighth Grade Continued</b> |  |                   |                   |                    |                |                    |               |
| B3.2C                         | Draw the flow of energy through an ecosystem. Predict changes in the food web when one or more organisms are removed.  |                   |                   | X                  |                |                    |               |
| 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. |                   |                   | X                  |                |                    |               |
| 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.  |                   | X                 | X                  |                |                    |               |
| B3.4C                         | Examine the negative impact of human activities.   |                   |                   | X                  |                |                    |               |
| B3.4e                         | List the possible causes and consequences of global warming.   |                   |                   | X                  |                |                    |               |
| B3.5B                         | Explain the influences that affect population growth.  |                   |                   | X                  |                |                    |               |
| B3.5C                         | Predict the consequences of an invading organism on the survival of other organisms.   |                   |                   | X                  |                |                    |               |
| B3.5d                         | Describe different reproductive strategies employed by various organisms and explain their advantages and disadvantages.   |                   | X                 | X                  |                |                    |               |
| L5.p1A                        | Define a species and give examples.  |                   |                   | X                  |                |                    |               |
| L5.p1B                        | Define a population and identify local populations.  |                   |                   | X                  |                |                    |               |