Lesson Plan for Wildlife Education Field Trip Program

Grades: 3-4

Subjects: Science

Curriculum Standards:

Third Grade – Science

Standard 2: Interdependence

GLE 0307.2.2 Explain how organisms with similar needs compete with one another for resources.

0307.2.2 Label a drawing of an environment to illustrate interrelationships among plants and animals (potential post-visit activity/assessment).

0307.2.3 Construct a diagram to demonstrate how plants, animals, and the environment interact to provide basic life requirements (potential post-visit activity/assessment).

SPI 0307.2.2 Determine how plants and animals compete for resources such as food, space, water, air, and shelter.

Standard 3: Flow of Matter and Energy

GLE 0307.3.1 Describe how animals use food to obtain energy and materials for growth and repair.

0307.3.1 Label a diagram to illustrate the food relationships that exist between plant and animals (potential post-visit activity/assessment).

0307.3.2 Create a chart to show how plants their food by eating plants and other animals (potential post-visit activity/assessment).

0307.3.3 Identify structures used by different plants and animals to meet their basic energy requirements.

SPI 0307.3.1 Identify the basic needs of plants and animals.

SPI 0307.3.2 Recognize that animals obtain their food by eating plants and other animals.

Standard 4: Heredity

GLE 0307.4.1 Identify the different life stages through which plants and animals pass.

0307.4.1 Sequence diagrams that illustrate various stages in the development of an organism (potential post-visit activity/assessment).

0307.4.2 Create a timeline to depict the changes that occur during an organism's life cycle (potential post-visit activity/assessment).

0307.4.3 Differentiate among the stages in the life cycle of a butterfly, mealworm, frog, and plant.

SPI 0307.4.1 Select an illustration that shows how an organism changes as it develops (potential post-visit activity/assessment).

Standard 5: Biodiversity and Change

GLE 0307.5.1 Explore the relationship between an organism's characteristics and its ability to survive in a particular environment.

0307.5.1 Create representations of animals that have characteristics necessary to survive in a particular environment.

0307.5.2 Investigate the connection between an organism's characteristics and its ability to survive in a specific environment.

0307.5.3 Describe how environmental factors change over place and time.

0307.5.4 Determine how changes in an environmental variable can affect plants and animals of an area.

0307.5.5 Construct a diorama that shows plants and animals in an appropriate environment (potential post-visit activity/assessment).

SPI 0307.5.1 Investigate an organism's characteristics and evaluate how these features enable it to survive in a particular environment.

Fourth Grade – Science

Standard 2: Interdependence

GLE 0407.2.1 Analyze the effects of changes in the environment on the stability of an ecosystem.

0407.2.1 Analyze how an increase or decrease in competition or predation affects an ecosystem.

0407.2.2 Design a simple experiment to illustrate the effects of competition, predation, and interdependency among living things (potential post-visit activity/assessment).

SPI 0407.2.1 Recognize the impact of predation and competition on an ecosystem.

Standard 3: Flow of Matter and Energy

GLE 0407.3.2 Investigate different ways that organisms meet their energy needs.

0407.3.1 Create a food web that illustrates the energy relationships between plants and animals and the key issues or assumptions found in the model.

0407.3.2 Classify organisms as carnivores, herbivores, or omnivores.

0407.3.3 Identify how a variety of organisms meet their energy needs.

SPI 0407.3.1 Determine how different organisms function within an environment in terms of their location on an energy pyramid.

Standard 5: Biodiversity and Change

GLE 0407.5.1 Analyze physical and behavioral adaptations that enable organisms to survive in their environment.

GLE 0407.5.2 Describe how environmental changes caused the extinction of various plant and animal species.

0407.5.1 Classify animals according to their physical adaptations for obtaining food, oxygen, and surviving within a particular environment.

0407.5.2 Describe how animal behaviors such as migration, defense, means of locomotion, and hibernation enable them to survive in an environment.

0407.5.5 Analyze the common causes of extinction and explain how human actions sometimes result in the extinction of a species.

SPI 0407.5.1 Determine how a physical or behavioral adaptation can enhance the chances of survival.

SPI 0407.5.2 Infer the possible reasons why a species became endangered or extinct.

Overview:

During a guided tour of the Glen Leven landscape, students will engage with plants and wildlife, will learn about relationships between living and non-living things, and will participate in activities that will highlight the importance of healthy ecosystems.

Goals:

Students will learn how an ecosystem functions, how living and non-living things are interconnected, and about the roles that plants and animals play in an ecosystem.

Activities:

ECOSYSTEM LESSON

- Ecosystems are the plants and animals interacting with their non-living environments (weather, Earth, Sun, soil, atmosphere). An ecosystem's development depends on the energy that moves in and out of that system. Ecosystems are everywhere - a garden can be an ecosystem, and so is a river near your home.
- Students will learn that Glen Leven Farm is an ecosystem. When people still lived here at Glen Leven they were part of that ecosystem. They ate plants and animals and drank the water.
- Students will describe an ecosystem and give examples. How are we as humans connected to our own ecosystem?

- **Habitat Web Activity**

    - This activity illustrates the interconnection of all living things. Students will have the opportunity to think about the many different interactions within an ecosystem. This is an important concept to learn in order to understand more complex issues, such as the effects of drought, exotic species, pesticides, and habitat loss.

    - During the Habitat Web activity, students will have a chance to create a web of connections between many different living and nonliving things found in a habitat.

- What happens to an ecosystem if organisms die out or a non-living element is altered?
- After the Habitat Web Activity, students will be given a scavenger hunt that they will fill out throughout their time at Glen Leven Farm.

DECOMPOSERS & PRODUCERS

- Students will learn about decomposers and producers in Glen Leven Farm's Education Garden.
- Students will discuss and understand why decomposers are important.
- Students will learn that soil doesn't just happen. It is the result of hundreds of years of activity that takes place above and beneath its surface.
- Students will see decomposers at work in the Worm Bin.

- Plants make up the biggest group within an ecosystem because they are the natural food producers for everyone. They are called producers because they produce their own food. They also produce all of the food that animals, including people, eat. Students will learn about the plants and food grown at Glen Leven Farm.
- Students will discuss and understand the importance of pollinators. Plants need pollinators to grow and produce food. The plant then uses the pollen to produce a fruit or seed. Many plants cannot reproduce without pollen carried to them by foraging pollinators.
- Students will engage with a beekeeper and see a honey bee demonstration.

PRIMARY & SECONDARY CONSUMERS

- Students will learn that animals that consume only plants are the primary consumers (herbivores). Secondary consumers eat primary consumers. They can be either carnivores (meat eaters) or omnivores (both plant and meat eaters).
- Students will learn that there are many primary and secondary consumers - they are second only to plants in the number of species that are supported by their existence.
- Students will discuss the importance of available food, water, shelter, and space. Students will be asked how we can all help wild animals by making sure they have access to the habitat they need.
- Students will discuss how we can tell if an animal has been in our backyard.

    - **Footprint Activity**

        - There are three P's of animal tracks: print, pattern, and placement. Print refers to an individual footprint's size and details. Pattern reveals how the animal is moving (walking, hopping, etc.). Placement is where the tracks are found. By looking at all three things, students can form a hypothesis about which animal made the tracks.

        - **First P:** Print. Each student will trace his/her own shoe on a sheet of paper and make a rubbing of the sole. The student will place one of his/her shoes in the middle of the circle. The rubbings will then be passed out randomly. Ask the students to find the shoe that matches the rubbing they hold. Afterward, the students will compare their footprints to those of animals. Explain that animals have unique footprints, too (size, shape, claws versus no claws, number of toes, and so on).

- **Second P:** Pattern. How do the students' rubbings differ? Explain that this is called pattern. Point out the tracks on the Track Activity Mat. Can they guess which is which?

- **Third P:** Placement. Explain that "placement" refers to where you find animal tracks. Placement helps you figure out what kind of animal tracks you are looking at because most animals favor certain habitats over others.

- The students will discuss the types of wild animals that could have homes in their backyards.

PREDATORS (Carnivores)

- Students will take a short walk to visit the miniature donkeys and cattle.
- Students will learn why the donkeys are on the property - to protect the cattle (Herbivores/Primary Consumers) from coyotes (Predators/Carnivores). This predator/prey relationship is important to the ecosystem.
- Students will be encouraged to think of other predator/prey duos besides cows and coyotes and discuss. Examples include: wolf/elk, grizzly bear/salmon, or owl/mouse.
- Students will be asked to consider what would happen if there were no predators in a place with many prey.

Students will return to the house after they have visited all four stations for a wrap up. Educators will be given take home sheets of activities for students to do at home or in the classroom.