Menagerie Farms Grade 2 Curriculum Ideas

Grade 2- MS State Standards Science

Develop and demonstrate an understanding of the characteristics, structures, life cycles, and environments of organisms.

Grade 2 : Interdependence

Conceptual Strand 1

Investigate and explain the interdependence of plants and animals. Herbivore, carnivore, or omnivore Predator-prey relationships

Guiding Question

1. What are the basic needs of all living things?
2. What are the different ways that living things are dependent on their environment?
3. What happens if an environment cannot meet the basic needs of the living things that live there?

The distinction between living and non-living is not always crystal clear. Cars, like living things require energy to function properly. They also move. But can they grow or make copies of themselves? To be considered alive, something must display all of the characteristics of living things: made of cells, obtain and use energy, grow and develop, reproduce, and respond and be able to adapt to their environment. Living things need food, water, and air; a way to dispose of waste; and an environment in which to live.

1. There are many connections between how an organism behaves and the place where it lives.
2. An organism can only survive in an environment that supplies its basic needs.

Ecology is the study of the relationships between the biotic, organisms of different and the same species, and the abiotic, or non-living components of the environment including the air, land, and water. Ecosystem is the name given to the natural unit in which these interactions occur as living things actively compete to obtain energy, shelter, or even a mate.

1. What are some general ways that organism of the same kind interact?
2. What are some general ways that different kinds of living things interact?
3. What are some examples of beneficial interactions between organisms?
4. What are some examples of detrimental interactions between organisms?

TLW take a farm walk and locate animals that are from the same species. Look at the ways that these animals interact. While on this walk find as many different kinds of birds you can find. Brainstorm how they are the same and different. What do you notice about coloring? What differences in feathers? Feet? What sounds do you hear? Does the rooster sound like the peacock? Does the Martin have the same job on the farm as a chicken? What are the basic needs of the birds?

Make a flipbook to show at least 4 different birds you see.

TLW interpret how flies can benefit from animals at the farm. Follow the life cycle of the fly.

TLW determine how seeds can be spread at the farm. Water, wind, on animals, through animals, on the pants or socks of humans, and intentionally planted.

TLW use the pumpkin patch to determine what it takes for the pumpkin plant to survive. Are these the same needs of the deer that might visit the pumpkin patch? Explore and explain what it takes to be called a living thing with the naturalist in the pumpkin patch.

TLW determine animals and plants within a food chain. What is a producer within the chain? Who are the consumers? What is the energy source?

TLW play ecology game Oh Deer! After the game determine why the deer survived or died in that round. Too much or not enough of food, water or shelter.

Follow Up Activities at school:

A. Play Oh Deer! Game
B. Brainstorm flow charts to show food webs.
C. Create a farm journal
D. Create a Venn Diagram or Double Bubble Comparison map to show difference between birds observed at the farm. (ie. hawk compared to peacock, rooster and hen)
E. Design an art mosaic using seeds found at the farm. (seeds might include dried beans, peas, corn, sunflower seeds, soybeans etc.) 10 bean soup mix is a great cheap supply of a nice variety. Build mosaics in Chinet paper plates and use Elmer's glue.
F. Illustrate and label the lifecycle of the pumpkin plant.

Grade 2 : Hereditary

Conceptual Strand 2

Plants and animals reproduce and transmit hereditary information between generations.

Guiding Question (Life cycles) *Reproduction

What are the principal mechanisms by which living things reproduce and transmit information between parents and offspring?

1. What are the stages that are common to the life cycle of all living things?
2. What are the similarities and differences among the life cycles of some common animals?

1. * Why do offspring tend to resemble their parents?
2. *What are some examples of physical traits that are passed along from parents to their offspring?
3. *Why are offspring not exactly the same as their parents?
4. *What is the difference between an inherited characteristic and one that develops as a result of interactions with the environment?

Grade Level Expectations

The fundamental life cycle to which all organisms invariably adhere includes birth, growth, sometimes reproduction, and death. Not surprisingly, the details of this cycle vary greatly among different species in terms of the gestation period, number of offspring produced, survival rate of newborns, appearance during different stages, time needed to reach adulthood, and life expectancy.

1. The life cycle of living things include being born, growing, changing into adults, reproducing, and finally dying.
2. Different living things have different stages that they pass though from birth to death.

1. * Many of an offspring's physical characteristics were inherited from their parents.
2. *Plants and animals are very much, but not exactly like their parents.
3. *Some characteristics such as the ability to ride a bicycle are learned and cannot be passed on to the next generation.

TLW sequence the life cycles of various animals and plants from the farm.

TLW make human timelines to show the normal lifespan of farm and forest animals. Do wild or domesticated animals live longer? Do all farm animals have the same lifespans? Do chicken

TLW will go on a visual hunt to find animal patterns. Do parents pass characteristics off to their off spring. Does each offspring look like the mother, father or a combination of each? Sketch the items you see similar and different. Are all of the horses at the farm marked the same way in size and coloring?

Follow Up Activities at school:

A. Do family hereditary project. Research how your family genes determine what you look like. Compare pictures to your parents, siblings, aunts, uncles, grandparents, long lost distant cousins. Do you share any common traits? Eye color, hair color, freckles etc.

B. Make a parent/offspring booklet. Draw and describe the similarities. This could be done digitally as an ibook where students could collaborate and add their work to make a class book.

C. Assign each student a parent and offspring to create on index cards to play Match It with as a class game. Make sure students label with the correct names for the animals.

D. Life cycle projects- Divide paper plates into quarters and design at least four stages of various animals and plants observed at the farm. Label the parts and write about the sequence of events.

Grade 2 : Biodiversity and Change

Conceptual Strand 3

Describe and categorize the characteristics of plants and animals. Plant parts (leaves, stems, roots, and flowers) Animals (vertebrates or invertebrates, cold-blooded or warm-blooded)

Compare the life cycles of plants and animals.

Guiding Question

1. What are some similarities and differences among different types of animals?
2. What are some similarities and differences found among individuals from the same kind of animal?
3. What is the connection between the characteristics of an animal and the place where it lives?
4. How do the external features of an animal help it to survive in the place where it lives?

TLW discover the things that all living things need to live and survive. (water, food, shelter, clean air)

A. Play Oh Deer! Game
B. Wildlife Touch Time and Discussion on survival of the animals we share our habitats with.
C. Discuss and categorize the plants and animals you would see on the farm and in a temperate forest.
D. Look for animal adaptations to help with camouflage. Does this animal use this as a predator or a prey? How has this animal adapted to protect it's young?
E. Discuss eyespots and why birds, fish, insects have these special adaptations.

Follow Up Activities at school:

A. Play Oh Deer! Game

B. Create a mural to show the animals and plants you might see on a farm and those you might see in a temperate forest.

C. Make a class collaborative booklet showing animals that use special adaptations to survive and thrive in their environments.

(Curriculum found at http://www.mde.k12.ms.us/docs/curriculum-and-instructions-library/2010-science-framework.pdf?sfvrsn=4)

Grade 2 Social Studies

Economics

a. Describe production and consumption of human-made goods and services (e.g., food production involves farmers, processors, distributors, weather, land, and water resources; automobile industry involves designers, engineers, welders, robots, etc.).

b. Explain how limits on resources affect choices about production and consumption (e.g., farming vs. industrial production; relocating vs. commuting).

c. Explain the roles of producers and consumers.

TLW explore how the early settlers of our area farmed the land and met their basic needs. Students will have hands on experiences with the crops and animals that would have been grown and raised. Students will see how tools have evolved to help in farming.

TLW discuss the crops of corn, cotton and soybeans. Where did they originate and how were they introduced to this area? What impact have they had on our history and economics of the region?

Follow Up Activities at school:

1. Make a paper or fabric class quilt.
2. Simulate butter making during the pioneer days by shaking heavy cream. Taste on crackers.

(Curriculum found at http://www.mscivilwar150.com/documents/EducationCurriculum.pdf)