# Menagerie Farms Grade 3 Curriculum Ideas

Grade 3- MS State Standards Science
Describe the characteristics, structures, life cycles, and environments of organisms.

# Grade 3 : Interdependence

## Conceptual Strand 1

*Investigate the relationships between the basic needs of different organisms and discern how adaptations enable an organism to survive in a particular environment.*

## Guiding Question

1. What are the general needs of all living things?
2. What causes competition among organisms of the same or different type?
3. What are some outcomes of competition among and within different groups of living things?

- The world offers many distinct environments that support the lives of different types of organisms.
- An organism can only survive if it meets its basic needs for food, water, and air; a way to dispose of waste; and an environment in which to live.
- Different types of organisms can have very similar basic needs.
- Organisms with similar basic needs that live in the same general environment compete for limited amounts of food, space, and mates.
- The basic resources needed to survive in any given environment have a limited abundance.
- When organisms compete, some are more successful than others in obtaining necessary, but limited resources.

TLW view and discuss the needs of crops growing on a plot of land.

1. Why do farmers try to control weeds, insects and animals from their crops?
2. Which insects are important for the growth of crops?
3. How is the climate of our region conducive for growing crops and livestock?
4. Which crops are native to our area?

5. What native wildlife has adapted to this area?

TLW explore the pumpkin patch and look for invading species of weeds and insects.

TLW determine the health of pumpkins in the patch due from weather related events.

TLW interpret the rings from logs to determine the life of that tree.

TLW Play the Oh Deer ecology game to show the needs of animals within the environment.

TLW observe, touch and draw various farm and forest animals and discuss the adaptations of each animal to survive and
thrive on the farm.

TLW follow the sequence for basic care of farm chores to keep animals fed, watered, groomed, exercised and habit cleaned.

TLW categorize items as living or non-living.

## Follow Up Activities at school:

A. Cut open pumpkins and measure skin, meat and the pulp, count the seeds then discuss and graph findings for pumpkins. What can you determine about the growing conditions from the data?

B. Plant various seeds at school and determine what they need to thrive. Use various grass seeds and discuss the data from growing them on what would grow best in our region of the country. Why do golf courses use certain species of grass? Research which of the grasses and farm crops are best for growing in our region. Why do certain heirloom crops grow better?

C. Research and Writing/Publishing Opportunities

*What is the impact of farming on the lives of all citizens? Research the amount of land from our state, region or country that was once farmland and has been since developed.

*What has happened to the family farm over the years? Why would people choose this occupation? What would the benefits and risks be?

# Grade 3: Heredity

**Conceptual Strand 2:** *Illustrate how the adult animal will look, when given pictures of young animals*

## Guiding Question (Life cycles)

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

## Grade Level Expectations (Life cycles) * (Reproduction)

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. Different organisms have stages through which they pass from birth to death.
2. One way to characterize a living thing is according to its unique life cycle.

* Reproduction is a fundamental biological event that results in the production of new members of the same kind. These new offspring can inherit all of its genes from a single parent through asexual means as in the case of bacteria, or sexually through the combination of specialized cells from two different parents of opposite sex as in humans. Sexual reproduction results in offspring that have a mix of genetic characteristics different from either parent.

1. Children in the same family are very much, but not exactly like their parents or each other.
2. Some characteristics are passed from parents to their offspring; others are not.

## Checks for Understanding

What are some of the similarities and differences among the life cycles of representative animals and plants?

1. Why are offspring not exactly the same as their parents or their siblings?
2. What are some examples of characteristics that are transmitted from one generation to the next?

TLW take an observation farm walk and look for examples of males, females, parents and offspring from the farm.
As they walk students will check off animals and match the name to the correct animal. *This would also be a great photo journaling experience for students. Students could each come with disposable or digital cameras to record information to journal about. The teacher or parents could also be the photographers and post these for students to compose a digital or printed journal of their animal comparisons.

TLW compare and analyze the differences between breeds of horses. How are Clydesdales and Quarter Horses the same, different? What were each bred for? How are they used on the farm?

Follow Up Activities at school:

A. Life cycle graphic organizers depicting the life-cyles of given farm animals or plants.

B. Research and Writing/Publishing Opportunities

*Research the various breeds of horses viewed at the farm as well as many other breeds. What makes the Tennessee Walking Horse so famous? Is it a natural trait or a man made adaptation?

*Photo Journal about farm experience, animal or plant species, etc.

# Grade 3 : Biodiversity and Change

## Conceptual Strand 3

*Research and explain diverse life forms (including vertebrates and invertebrates) that live in different environments (e.g., deserts, tundras, forests, grasslands, taigas, wetlands) and the structures that serve different functions in their survival (e.g., methods of movement, defense, camouflage).*

## Guiding Question 3

*How does natural selection explain how organisms have changed over time?*

An adaptation is a feature found within a plant or animal population that confers some form of benefit on the individuals that possess this inherit characteristic. Adaptations can be behavioral such as the schooling of fish that afford protection from predators or anatomical as in the different beak shapes found in a bird population. Statistically speaking, individuals in a population that possess such beneficial characteristics have a higher probability of surviving, reproducing, and passing along these inherited traits to their offspring.

## Checks for Understanding

What are some factors that account for how well a particular type of organism survives in a given environment?

1. Environmental changes can be short or long term; profound or small.
2. Significant changes in the environment can have a dramatic effect on the organisms living in that area.
3. When an environment changes, individual types of living things may adapt, leave the area, or become extinct.
4. A species becomes threatened when the number of individuals is so dramatically reduced that the odds of continued survival are low.
5. An endangered species is one whose population size is so low that it is likely to become extinct.
6. A species becomes extinct when the last existing member of that species dies.
7. Some extinct species are known only from the fossil evidence that was left behind.
8. Each year thousands of animals and plants become extinct.

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 with naturalist about the survival of the animals we share our habitats with. Animal presentation with farm animals, forest animals undergoing rehabilitation, and artifacts from animals. (pelts, skin sheds, shells, antlers etc.)

C. Discuss and categorize the plants and animals you would see on the farm and in a temperate forest. Are these the same animals you would have seen a decade ago? A century ago? What has changed?

D. Use the data found from the rings of tree cookies to determine what has happened during the life of that tree.

E. Honeybee farm exploration

Why are bees needed? What can farmers do to encourage them? What are we doing as humans to harm their population? What will happen if we harm this species until extinction? What can we do to reverse the problem?

Follow Up Activities at school:

A. Play Oh Deer! Game

B. Create a flow chart showing how environmental stressors can affect crops and animals.

C. Research and Writing/Publishing Opportunities

*Research on GMO

Why do farmers use these seeds? What impact does it have on crop production? Can

changing the seeds to become drought resistant impact production? Do these practices hurt or help us?

* Research on the health of the honeybee and it's economic and health effects on humans.

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