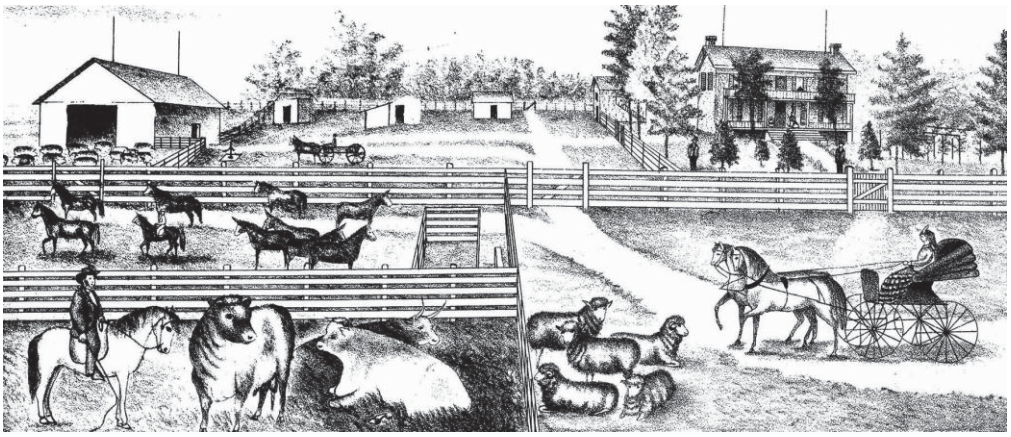
"Feeding the Animals": A Pre-Visit Activity for JB Mahaffie Had a Farm (Grades 3-5)



Animals on a farm in the 1860s were able to supply basic needs for the family that lived on the farm. On the Mahaffie farm, sheep provided wool for socks, gloves and hats. Pigs, chickens and cattle were sources of meat. Mules, horses, and oxen were the draft power required for pulling plows, wagons and powering other machines on the farm. Grocery and department stores were not just down the street. If farmers didn't grow it, or raise it, they had to do without it. Read the passages below in order to find the answers to the questions that follow.

In the spring, and summer months, grazing animals are able to feed themselves simply by munching grass. Each horse needs about 2 acres of grazing pasture to stay healthy, so you need twice as many acres as you have horses. When green grass turns brown in the fall, the grass rests until spring rains and warmer temperatures. If left in a brown pasture, the animals would get hungry and skinny by the time the grass would start growing again in the spring. Mr. Mahaffie understood the importance of feeding his animals throughout the winter so they would be strong and ready to pull the plow, cultivators, and wagons for the success of his spring planting season. He had to plan ahead by keeping some fields for a crop of hay (dried grass). Taking care of his animals on the farm was like taking care of your car or truck in the present day.

In the fall, grass was allowed to grow in large pastures. The farm today is only 22 acres, but in the 1860s, was as large as 540 acres, plenty of room for large herds of cattle, horses, mules, and sheep to move about and graze for their own food in the spring and summer months. J.B. Mahaffie would keep animals out of certain fields of grass that would be allowed to grow until it was about two to three feet high. Then Mr. Mahaffie would use the mower (look for it in the large barn when you come to visit) to cut the grass and allow several days to dry out. The grass is rolled into large bales or made into square bales for storage in the top of the barn or other large storage shed. The horses and other farm animals would have food in the winter as long as the hay lasted. When you come to the farm, you will see red corn called Bloody Butcher corn. The corn was also used to feed the animals.

Discussion: 1. How many healthy horses can be kept on 20 acres?

2. Why did Mr. Mahaffie need to store hay for the winter?

3. What is the name of the feed corn J.B. Mahaffie grew on his farm?

“Bloody Butcher Corn”: A Post Visit Genetics Activity for JB Mahaffie Had a Farm (Grade 3)

Background: J.B. Mahaffie used both Bloody Butcher corn and hay as a feed source for his animals, which helped them get through the long Kansas winters. The hay provides the natural roughage in their diet, and the grain provides extra nutrients and energy. You may have noticed that all the corn in the corn bin was not the same color and size. This activity will explore the reason for this.

Next Generation Science Standards covered by this activity:

- 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.
- 3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.
- 3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

Part One-Observations on Inherited Traits.:

1. Look at the pictures of corn below. Count how many different colors you see in each ear of corn.

How many? _____

How many? _____

How many? _____

2. Go to this website and download/print the activity cards to do at home with your family. http://teach.genetics.utah.edu/content/begin/traits/familytraitsandtraditions.pdf Learn how some traits are inherited from parents and some are learned through your culture. IF anyone has ever said you look like your mom or your dad, it is because your traits came from both your mom and dad.

3. Why is this true? This difference in colors on the same ear of corn is because each kernel of corn has two parents, just like you do. Each corn kernel is a product of the two parents. The different colors result from the blend of genetic material from both parents. If both parents are yellow, then kernels of the offspring will be yellow. If however, the parents had different colors the offspring corn kernels will vary in color.

Part Two- Heredity and the Environment:

Look at the plants below

Photo courtesy of Getty Images.

Photo courtesy of Scott Kinmartin and Andrew Fogg via Flickr.

If the plant on the left survives, it will pass on its drought-resistant trait to its offspring. The offspring will also be able to survive future droughts.

The cold temperatures in Antarctica keep the moss on the right from growing more than 1 inch. If any plants grow taller, they will freeze and die and not reproduce.

Discussion:

1. Using the pictures of the corn plant and the moss above, can you decide whether or not traits can be influenced by the environment? (Yes they are influenced by the environment. If they have adaptations that allow them a better chance of survival, they will live long enough to reproduce and past these traits on to their offspring)

2. Look at those pictures above again, but this time, decide whether the corn plant could survive in Antarctica and the moss plant could survive in Kansas. (They would probably not, as they have adaptations that enable them to live only in certain areas that are war