Learning Destination Activities

Farm Animals & Their Babies

Paul R. Knapp Animal Learning Center

Level: Pre-K to 2nd Grade

Skills: Language Arts & Science

Objectives: Students will compare the physical similarities and differences of farm animal adults and their offspring. They will also identify the correct names of common farm animals and match the picture of an adult animal with the baby.

Background: Prior to the Fair, ask the students if they have ever been to a farm or petting zoo. Discuss the animals they saw and/or experienced. Write down their answers on a board.

Ag at the Fair: Tour the Animal Learning Center. Take in all the different farm animals and notice how big the mothers are and how small the babies are. See the differences in size and how many offspring each species has. Make sure to check out the hatchery to see the baby chicks hatching each day.

References

Iowa Agriculture Literacy Foundation https://www.iowaagliteracy.org/Article/Farm-Animals-and-Their-Babies

Midwest Dairy Association http://www.midwestdairy.com/

Iowa Beef Industry Council http://www.iabeef.org/

Iowa Pork Producers http://www.iowapork.org/

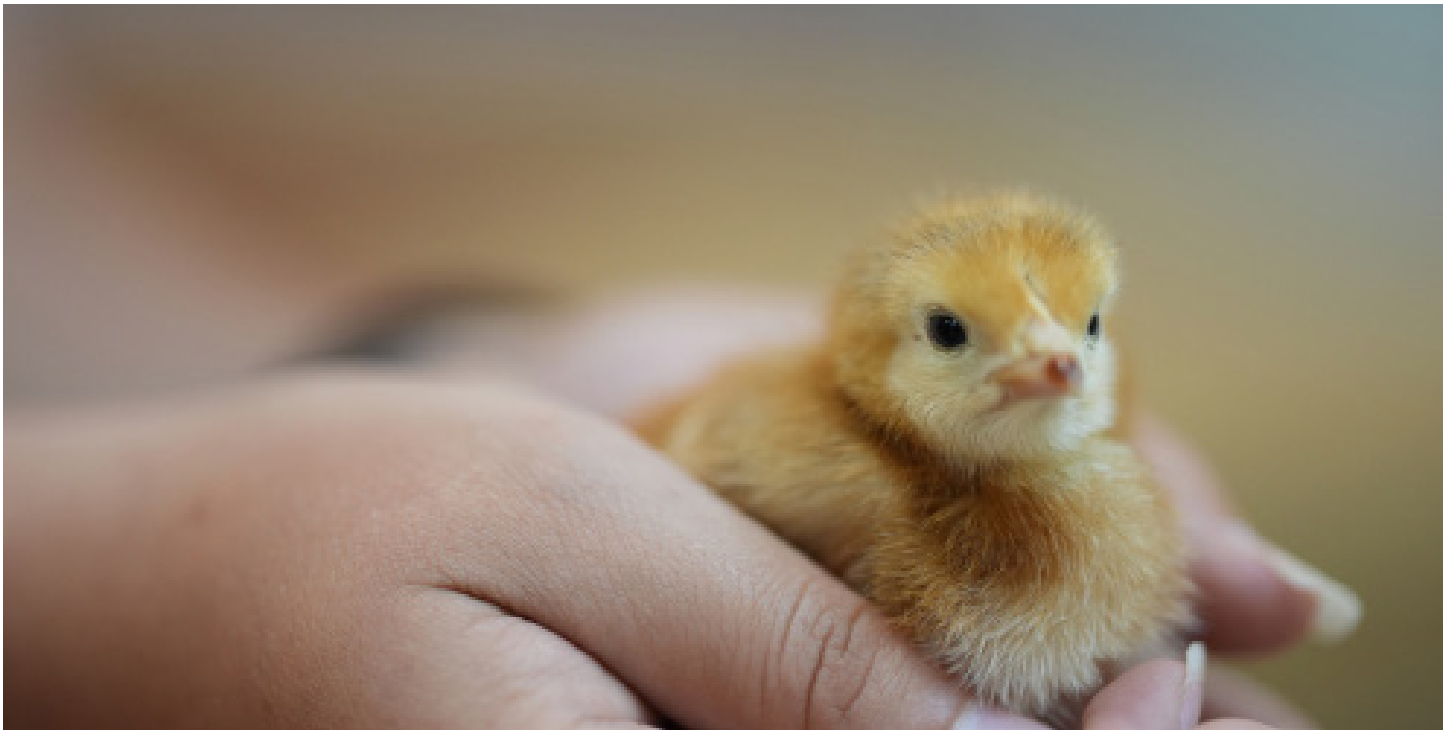
Iowa Turkey Federation http://www.iowaturkey.com/

Iowa Egg Council http://www.iowaegg.org/

Iowa Sheep Industry Association http://www.iowasheep.com/

Iowa Soybean Association http://www.iasoybeans.com/index.php

Iowa Corn Promotion Board http://www.iowacorn.org/



Learning Destination Activities

Ice Cream in a Bag

Milking Parlor & Boulevard of Dairy Breeds

Level: Pre-K to 2nd Grade

Skills: Science & Literacy

Objectives: Students will learn about dairy and food science along with placing steps in sequence.

Background: Students will learn where ice cream comes from. They will also learn that it can be made in a classroom with the understanding that the freezing point of water is actually lowered by adding salt to the ice between the bag walls. Heat energy is transferred easily from the milk through the plastic bag to the salty water causing the ice to melt. As it does so, the water in the milk freezes, resulting in ice cream.

Ag at the Fair: Tour the Animal Learning Center. Take in all the different farm animals and notice how big the mothers are and how small the babies are. See the differences in size and how many offspring each species has. Make sure to check out the dairy hutches and see the baby dairy calves. These calves will grow up and become the mothers that produce the milk we buy in the grocery store and that you will be using to make ice cream.

Materials Needed

- 1/4 cup sugar
- 1/2 teaspoon vanilla extract
- 1 cup milk
- 1 cup whipped cream or half & half
- Crushed ice (1 bag will freeze 3 bags of ice cream)
- 1 cup rock salt (approximately 8 cups per 5 lbs.)
- 1 quart and 1 gallon size Ziploc freezer bags
- Duct Tape
- Bath Towel

Instructions

1. Put the milk, whipped cream, sugar and vanilla in a 1-quart freezer bag and seal. For security, fold a piece of Duct Tape over the seal.
2. Place the bag with the ingredients inside a gallon freezer bag.
3. Pack the larger bag with crushed ice around the smaller bag. Pour 1/3 to 1 cup of salt evenly over the ice.
4. Wrap in a bath towel and shake for 10 minutes. Open the outer bag and remove the inner bag with the ingredients. Wipe off the bag to be sure salt water doesn't get into the ice cream.
5. Cut the top off and spoon into cups.
6. It makes about 3 cups (1 bag will serve 4 students).
7. Serve plain or add your favorite toppings. Enjoy!
8. Write an opinion piece and explain to the audience what your favorite ice cream topping is and why. Use complete sentences and illustrate the story once the writing is complete.

References

Midwest Dairy Association http://www.midwestdairy.com/

Learning Destination Activities

Making Butter

Milking Parlor & Boulevard of Dairy Breeds

Level: Pre-K to 2nd Grade

Skills: Science

Objectives: Students will learn where milk comes from and what products it can be made into.

Background: Cows that are well cared for produce wholesome, healthy milk. The dairy farmer keeps the cows healthy by making sure they have plenty of green grass and hay to eat. All morning and evening, dairy cows are milked on farms across Iowa. Farmers used to milk cows by hand, but now the use of milking machines is much more common. The farmer milks the cows; the milk is then cooled and stored in a stainless-steel tank. The milk stays in the tank until it is time for it to go to the milk processing plant. When it is time to take the milk to the processing plant, a stainless-steel tank truck comes to the farm and pumps the milk from the cooling tank. The truck's tank acts like a huge thermos bottle and keeps the milk cool during the trip to the processing plant. When the milk arrives at the processing plant, workers take it and make it into many delicious, healthy things to eat. Some of the milk goes into the cartons you can get at the store or right there in the lunchroom at school. The rest is made into things like butter, cheese, ice cream and cottage cheese.

Ag at the Fair: Tour the Boulevard of Dairy Breeds, which will have three dairy cows of each of the six major dairy breeds in Iowa. There will be information on each of those breeds along with Iowa dairy experts to answer your questions. Also, be sure to watch the Story of Milk come to life at the Milking Experience at the Milking Parlor daily during the Fair.

Materials Needed

- Heavy whipping cream
- Baby food jars (with lids)
- Scale
- Bread or crackers

Instructions

Students will observe the process of changing one food form to another, such as a liquid to a solid.

1. Talk about where milk comes from and how milk is made into many products, such as butter.
2. Go through the safety procedures and importance of cleanliness with students.
3. Discuss the whipping cream in its liquid form and let the students know that a change will be taking place with the whipping cream.
4. Pour the whipping cream into baby food jars until half full.
5. Screw on the lids. Before shaking, carefully check to make sure the lids are closed securely.
6. Have the students take turns shaking the jar to "churn" the cream. The teacher should check the jars to see if the cream has separated into milky liquid and creamy solid butter.
7. Help student carefully pour off the liquid. Serve the homemade butter on bread and crackers.

References

Iowa Agriculture Literacy Foundation https://www.iowaagliteracy.org/Article/Farm-Animals-and-Their-Babies

Midwest Dairy Association http://www.midwestdairy.com/

Learning Destination Activities

Pumpkin Seed Counting

John Deere Agriculture Building Yard

Level: 3rd to 5th Grade

Skills: Math

Objectives: Students will get a broader understanding about agriculture and the use of pumpkins. Students will learn about the lifecycle of the pumpkin and the pumpkin industry. Students will practice math skills with measurements and make pumpkin pie in a bag.

Background: Pumpkins come in all different sizes. There are giant varieties and miniature ones, but the one thing all pumpkins have in common is all have seeds that they grow from. These seeds are also stored in the pumpkin. Talk to the students about how they may have seen these seeds when cleaning out a pumpkin at Halloween. Talk to them about using seeds to grow things and see if they remember how many seeds have been found in pumpkins they have cleaned out.

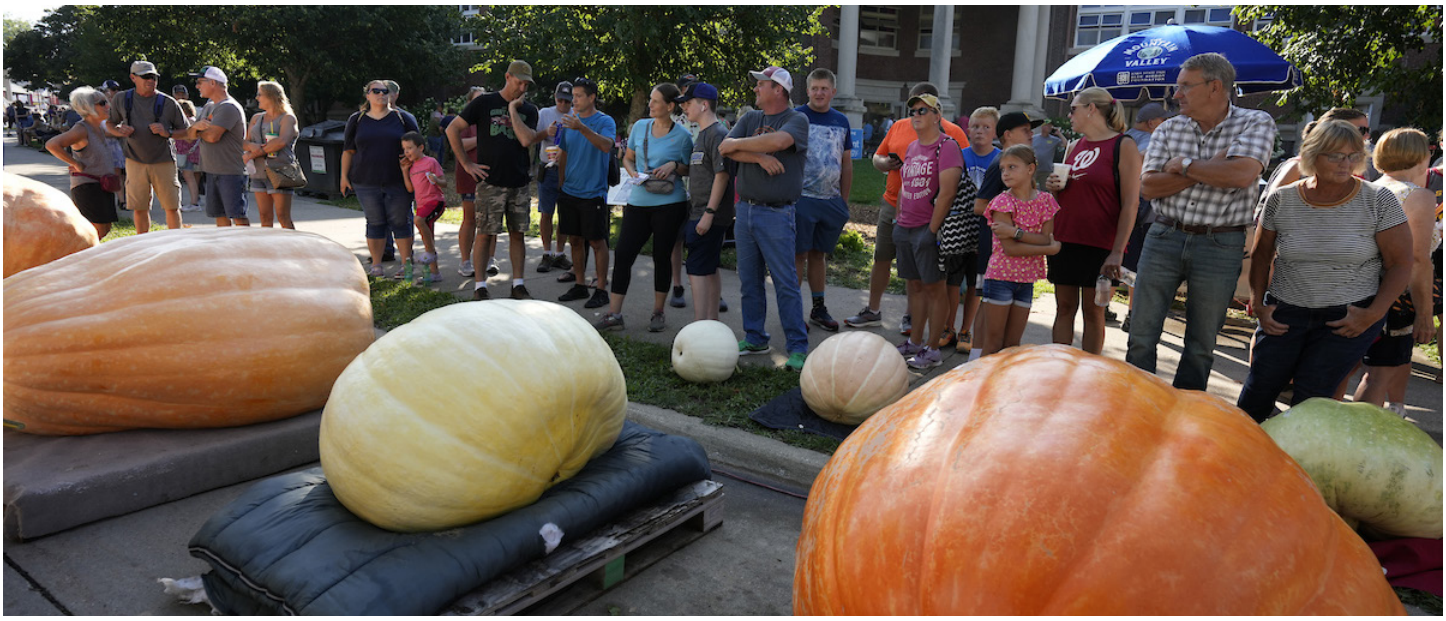
Ag at the Fair: Tour the Giant Pumpkin display in the John Deere Agriculture Building yard. There will be pumpkins of all different shapes and sizes.

Ingredients Needed for Pumpkin Patch Pie

- 1-gallon Ziplock freezer bag
- 1-quart Ziplock bag
- 2 2/3 cup cold milk
- 2 packages (4 serving size) instant vanilla pudding mix
- 1 can (15 oz) solid-pack pumpkin
- 1 tsp ground cinnamon
- 1/2 tsp ground ginger
- Crushed graham crackers
- 25 small cups
- 1 can whipped topping
- 25 spoons

References

Iowa Agriculture Literacy Foundation: Pumpkins Aren't Just for Carving! https://www.iowaagliteracy.org/Article/Pumpkins-Arent-Just-for-Carving



Learning Destination Activities

All About Milk!

Milking Parlor & Boulevard of Dairy Breeds

Level: Pre-K to 2nd Grade

Skills: Language Arts, Math and 21st Century Skills

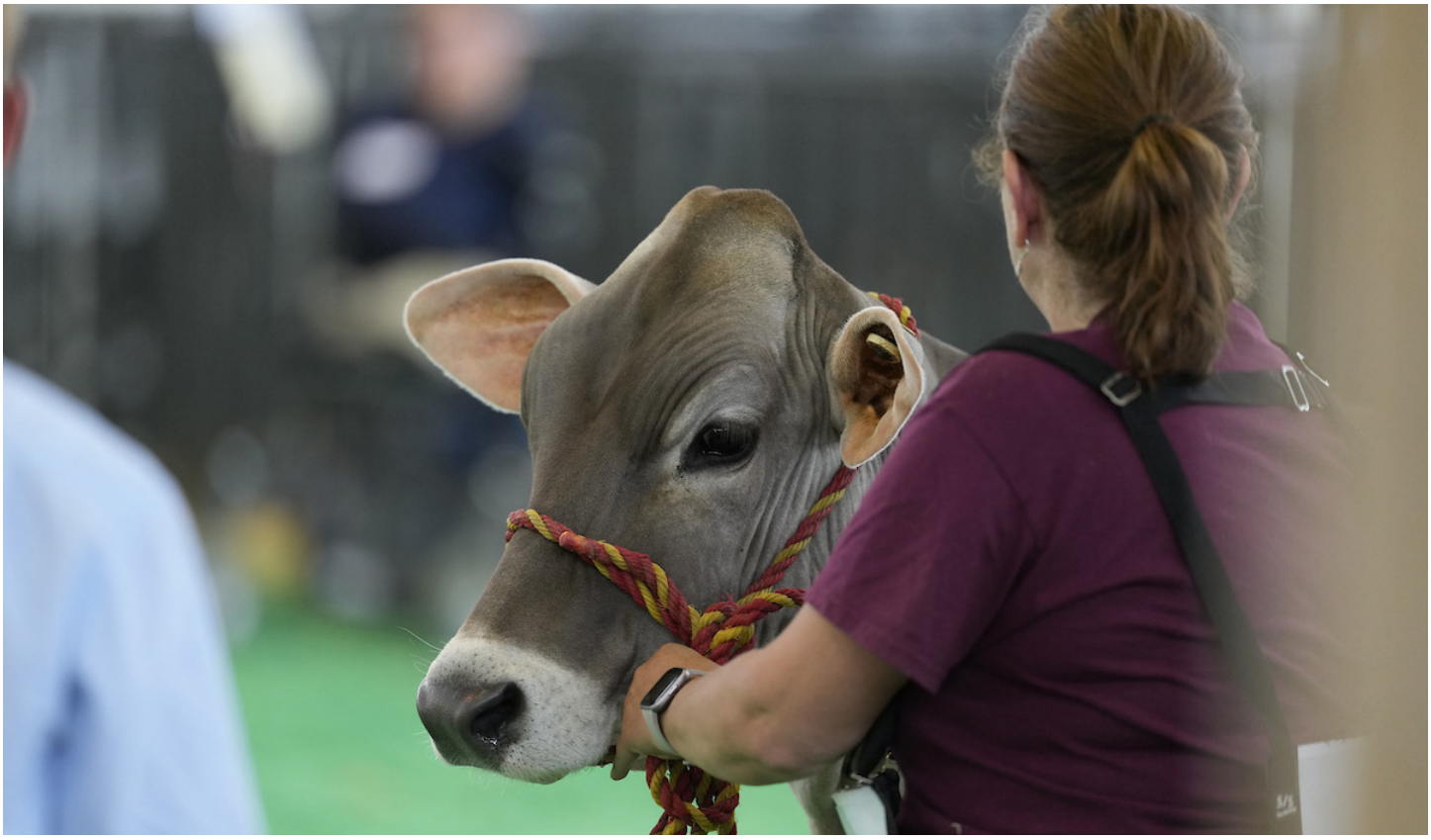
Objectives: Students will learn where milk comes from and what products it can be made into.

Background: Cows that are well cared for produce wholesome, healthy milk. The dairy farmer keeps the cows healthy by making sure they have plenty of green grass and hay to eat. All morning and evening dairy cows are milked on farms across Iowa. Farmers used to milk cows by hand but now the use of milking machines is much more common. The farmer milks the cows; the milk is then cooled and stored in a stainless-steel tank. The milk stays in the tank until it is time for it to go to the milk processing plant. When it is time to take the milk to the processing plant, a stainless-steel tank truck comes to the farm and pumps the milk from the cooling tank. The truck's tank acts like a huge thermos bottle and keeps the milk cool during the trip to the processing plant. When the milk arrives at the processing plant, workers take it and make it into many delicious, healthy things to eat. Some of the milk goes into the cartons you can get at the store or right there in the lunchroom at school. The rest is made into things like butter, cheese, ice cream and cottage cheese.

Ag at the Fair: Tour the Boulevard of Dairy Breeds, which will have three dairy cows of each of the six major dairy breeds in Iowa. There will be information on each of those breeds along with Iowa dairy experts to answer your questions. Also be sure to watch the Story of Milk come to life at the Milking Experience at the Milking Parlor daily during the Fair.

References

Iowa Agriculture Literacy Foundation: All About Milk! https://www.iowaagliteracy.org/Article/All-About-Milk



Learning Destination Activities

Math on the Farm

Cattle Corner

Level: 2nd to 3rd Grade

Skills: Math

Objectives: Students will understand that farmers and other people in agriculture use math in their jobs.

Background: In Iowa, cattle are a familiar part of the landscape. Most of the cattle you see are beef cattle. In 2010, there were 3.8 million beef cows in Iowa, which would rank Iowa as seventh in the nation for cattle. Iowa has 209,000 dairy cows, which makes us the twelfth highest state in the nation for dairy cow numbers.

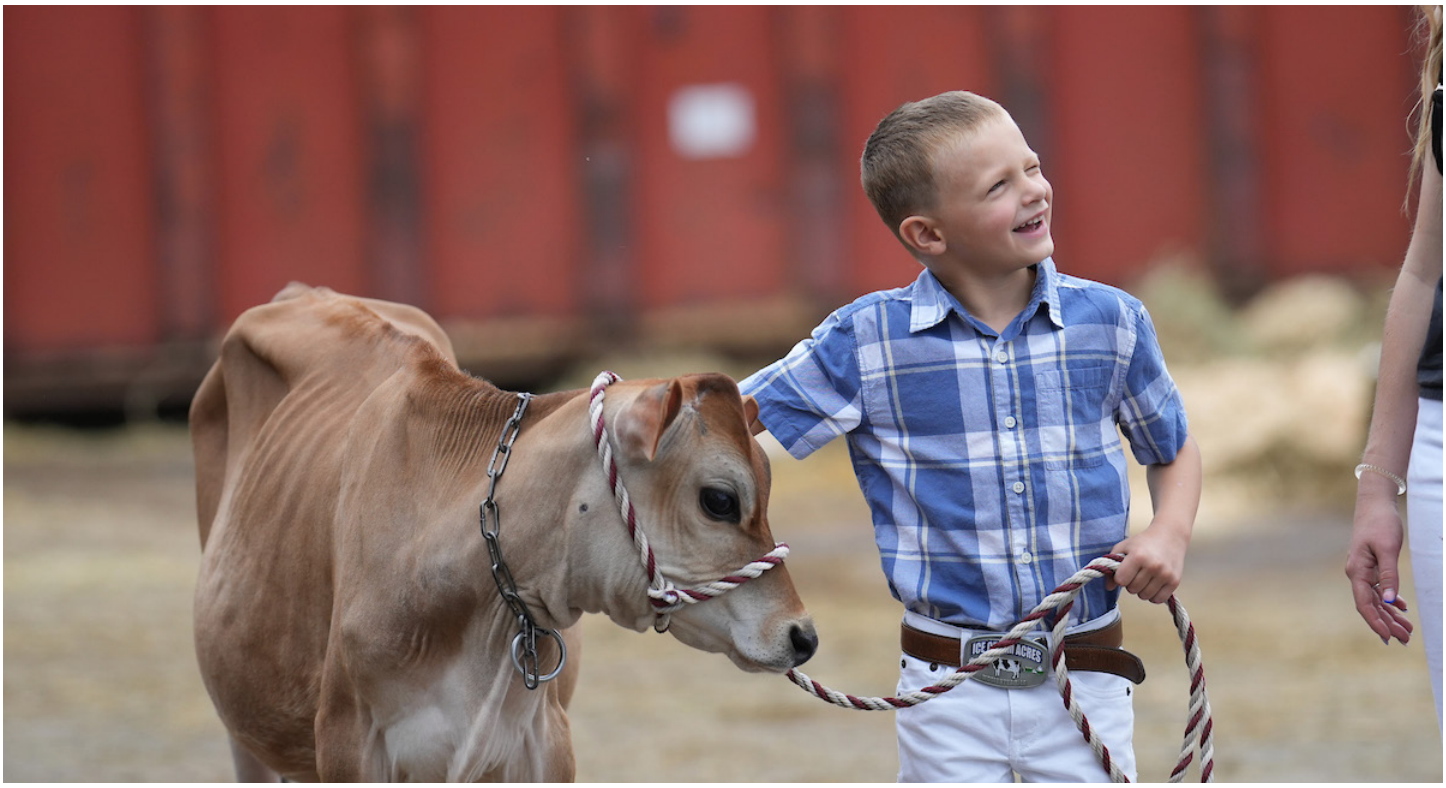
We get meat from beef cows and milk products from dairy cows. Since we get milk from dairy cows, they usually have very large udders. For those reasons, their basic shape is different from beef cows. The basic shape of a beef cow is a rectangle. The basic shape of a dairy cow is a trapezoid. Some common dairy cattle have markings that make them easy to recognize. Holstein cattle are probably the most recognized because they are white with black spots. But dairy cattle, like beef cattle, come in many different colors.

Because they are milked every day, dairy cattle usually stay close to the dairy barn. Beef cattle do not have to stay close to home and are sometimes moved from pasture to pasture. Sometimes, the fields are many miles away from the farmhouse. For that reason, the cattle you see in fields along the side of the road are more likely to be beef cattle.

Ag at the Fair: Be sure to check out the Cattle Corner located in the North Annex of the Cattle Barn. This area is dedicated to highlighting the differences and similarities between these two species.

References

Iowa Agriculture Literacy Foundation: Math on the Farm https://www.iowaagliteracy.org/Article/Math-on-the-Farm



Learning Destination Activities

A Bean is a Seed

Little Hands on the Farm

Level: Pre-K to 2nd Grade

Skills: Science

Objectives: Students will learn about germination by sprouting beans and caring for them in small necklaces which they keep around their necks.

Background: When a seed gets warmth, air and water, it starts to change. The stem and the root emerge from the seed; this is called germination. Germination occurs if the seed is in a warm environment. We plant seeds in the spring, when the ground is warming up. The seed is the food for a baby plant until it can grow its own root system. A seed is germinated when it can grow without the food stored in the seed.

A bean is a plant seed. In Iowa, we grow soybeans as a crop. Soybeans are used in common products, like candy bars, linoleum and other building materials, ink used in newspapers, crayons, food like soy sauce and soy oil, lip balm, hand lotion and other makeup products. But in Iowa, we use soybeans to feed the world and farm animals.

Ag at the Fair: Tour Little Hands on the Farm and see more information on soybeans and how they are used in our state!

Instructions

1. Provide each student with one large and one small bean, a plastic jewlery bag and a cotton ball.
    - Students will place the cotton balls and beans inside the bags and moisten the cotton ball with a few drops of water.
    - Students will punch holes in the bags with a hole punch.
    - Students will string the yarn through the hole and tie ends to make a necklace.
    - Ask what conditions are necessary for a seed to germinate (moisture, warmth and sometimes darkness). Ask students where they might place the bags to provide the best conditions for germination.
    - Students will hang the bags around their necks and tuck them inside their clothes.
    - Tell students they are responsible for providing their bean seeds with the best possible care until they have sprouted.
2. Students will name their sprouts and tell their classmates their names.
    - Send home a note to the parents/guardians explaining the need for bean sprouts.
    - Students will record the progress of their seeds. Which ones grow faster? Each student can dicuss the changes taking place in the sprout.
    - At the end of the three days, make a chart as a class showing how many of the seeds have sprouted.
    - After the students have cared for their bean sprouts for a couple days, they can discuss how the needs of the bean sprouts have changed and how they can be planted in a classroom garden.

References

Iowa Soybean Association http://www.iasoybeans.com/index.php