agMAG

CONNECTING YOU TO NEBRASKA AGRICULTURE

Issue 1

AT SCHOOL WITH AGRICULTURE!

Do you know what Nebraska's #1 industry is? AGRICULTURE!

Agriculture is the production of food (what we eat!), fuel (to get us where we are going!), and fiber (what we use and wear!). And guess what? Agriculture is EVERYWHERE. In fact, we are at school with agriculture every day!

LOOK AROUND YOUR CLASSROOM.

Make a list of anything you think is made from plants or animals:

- _____
- _____
- _____

- _____
- _____
- _____

Almost everything in the classroom comes from agriculture! Paper and pencils come from trees grown for wood and pulp. Soap is made from the fat in animals. Glue and paint have corn starch (it makes them thick) which comes from corn. Crayons are made from soybeans. And the baseball, volleyball, and basketball you use in P.E.? They're all made from animal products. And what about your clothes? Your jeans and shirts are made from cotton, and leather shoes and belts come from beef animals. Agriculture brings us almost everything we use and wear at school each day!

AGRICULTURE: THE BIG PICTURE

Agriculture is farming and ranching—planting and harvesting crops, fruits and vegetables, and raising livestock and poultry. But there is so much more! It's the entire industry that brings animals, plants, and their by-products (what is leftover from making a main product) to our everyday lives.

PRODUCTION: growing and harvesting plants; raising animals. Example: farmer

PROCESSING: changing raw materials into many different things. Example: food scientist

DISTRIBUTION: getting the products to us. Example: truck driver

What part of the agriculture industry does each type of worker/job fit into? Write "**production**, **processing**, or **distribution**" in each blank.

- _____ gardener
- _____ florist
- _____ greenhouse manager
- _____ food safety inspector
- _____ meat scientist
- _____ soil scientist

- _____ veterinarian
- _____ restaurant owner
- _____ seed grower
- _____ butcher
- _____ rancher
- _____ grocer

DID YOU KNOW?

1 in 4 jobs in Nebraska are related to agriculture!

NEBRASKA: A LEADER IN AGRICULTURE TECHNOLOGY

Nebraska has many companies who are leading the way in applying technology in agriculture. Let's learn about a business in Lincoln, NE that helps cattle producers keep their animals healthy!

When you get sick, you probably tell an adult who may give you medicine or take you to the doctor. What happens when a cow or steer gets sick? They can't talk! It's up to the farmer or rancher to observe animals for signs of illness.

A Nebraska business is using technology to help producers keep animals healthier. Ear tags are commonly used to identify animals. Quantified Ag in Lincoln produces special ear tags called SenseTag™ that connect to a smart phone or other internet device. The ear tags track the behavior of cattle and sensors detect if an animal is sick. An alert is sent to a smart phone or computer so the animal can be treated and get better faster. The program keeps a medical record of each animal—similar to how a doctor keeps track of your illnesses, treatments, and vaccinations.

This is one example of how technology is applied in agriculture. Computers, smart phones, and tablets are all used in agriculture every day. Think about agriculture **production**, **processing**, and **distribution**. How can technology be used in each area?

WHAT KIND OF TECHNOLOGY DO YOU USE EVERY DAY?

CAREER SPOTLIGHT

Brian Schupbach, Quantified AG

Do you have an interest in computers and technology? You could have an exciting future in agriculture, just like Brian Schupbach! Let's meet him!

What do you do?
I am the Chief Technology Officer and Co-Founder at Quantified Ag—we create ear tags to identify and manage illness in cattle.

Where did you grow up and how did you become interested in technology?
I was born and raised in Lincoln, NE! My earliest software experience began in school by taking elected computer, math, and other project-based courses.

Where did you go to school?
I attended Beattie Elementary, Irving Middle School, Southeast High School, and University of Nebraska, all in Lincoln. I received a degree in Management Information Systems from DePaul University.

What message do you want to share with students?
Kids growing up today have a unique opportunity to get in on the ground floor and combine their knowledge or passion for agriculture and create a new technology that changes the world.

LET'S LEARN ABOUT CORN!

HISTORY OF CORN

Corn is a grass native to the Americas and is thought to have been first grown in central Mexico 7,000 years ago. Corn is important in Nebraska's history too. Read each statement below and fill in the blank with the correct word using the word bank to the right to complete the sentence.

1. Corn has been a part of Nebraska's history for _____ years.
2. Native Americans in Nebraska grew lots of corn in areas rich with _____ and streams.
3. By the early 1700's, Native Americans raised corn crops yielding _____ bushels per acre.
4. Corn was raised to grind for _____, to be eaten raw, and to be popped.
5. With the opening of the Nebraska territory in 1854, Euro-American farmers learned _____ _____ Nebraska was good corn country.
6. In the 1880's, corn farmers produced more corn by fewer people and there was a need for _____ products.
7. Because corn proved an excellent animal feed (especially for beef cattle), by the 1880's Nebraska was a leader in _____ feeding.
8. As early as 1910, people looked to corn to serve as a motor fuel, called _____ .

ETHANOL
RIVERS
VALUE-ADDED
LIVESTOCK
1,000
MEAL
30
EASTERN AND SOUTHERN

Our dinner plate might contain corn on the cob or frozen corn—but there is so much more! Corn is found in cereal, pancakes, muffins, doughnuts, and corn bread—just to name a few!

About 16% of Nebraska corn goes to feed livestock. Cattle, sheep, and hogs all eat corn. Corn helps grow animals into the hamburger, lamb chops, and bacon we enjoy!

Ethanol made from corn is an important fuel in Nebraska and across the U.S. Corn-based ethanol replaces some petroleum-based fuels, like regular gasoline, and it is renewable!

Corn by-products can be found in many things: plastic, lotions, aspirin, batteries, chalk, disposable diapers, fireworks, matches, rubber tires, and toothpaste! Corn is everywhere!

97% of corn grown in Nebraska

SWEET CORN
What you buy in the grocery store or farmer's market is fresh sweet corn. Also found frozen or canned.

WHITE CORN
Produced for humans to eat—especially in products like chips or tortillas.

FIELD CORN
Primarily used for livestock feed and ethanol production. The "dent" occurs in the kernels as the ear dries down for harvest.

POPCORN
Nebraska is the national leader in popcorn production.

HIGH-AMYLOSE CORN
High-starch corn, used in textiles, candy, and adhesives.

RED CORN
Unique type of sweet corn with a "nutty" taste.

BLUE CORN
Used primarily in human food products, especially chips and Native American dishes.

ORNAMENTAL CORN
Also known as Indian corn. Comes in a variety of colors and patterns.

AN ACROSTIC POEM ABOUT CORN

An acrostic poem uses the letters in a word to begin each line of the poem. All lines of the poem relate to or describe the main topic word. Write an acrostic poem about corn.

C _____

O _____

R _____

N _____

WHAT'S FOR LUNCH?

Check out the lunch menu. In each blank write what part of agriculture each food item comes from and if it's a fruit, vegetable, protein, grain, or dairy.

LUNCH MENU:

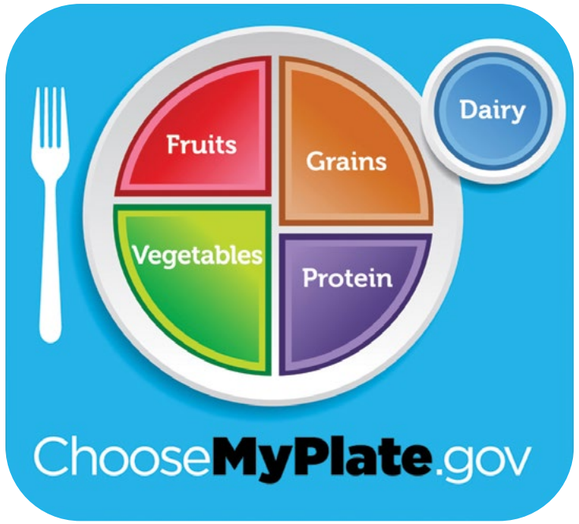
Chicken nuggets: _____

Smashed potatoes: _____

Carrots, lettuce, and tomatoes: _____

Fresh peaches: _____

Milk: _____



BE WELL WHEN YOU EAT WELL!

What do you know about making healthy food choices? One tool to help you make good decisions is MyPlate. It's a healthy eating guide from the United States Department of Agriculture (USDA). MyPlate shows you how to divide your plate for a healthy meal. It gives details about each of the food groups: vegetables, fruits, grains, proteins, and dairy. It also shows how much of each you should eat. MyPlate reminds us to:

- Eat smaller portions
- Eat lots of vegetables, fruits, and whole grains
- Change up the proteins you eat
- Include lots of calcium-rich foods

CHECK YOUR MENU!

Which of these is a better choice and WHY?

DRINK _____orange pop _____water or milk

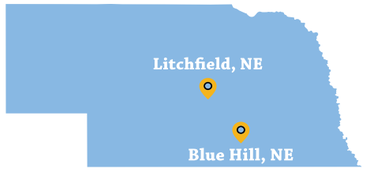
MAIN ENTRÉE _____nachos with taco meat and cheese sauce
_____chicken whole grain tortilla wrap with veggies

SIDE _____raw vegetables _____fried mozzarella sticks _____french fries

DESSERT _____chocolate cake with frosting _____fresh strawberries _____chocolate chip cookie

HEALTHY PARTNERSHIPS: SCHOOLS, FOOD, AND YOU!

LITCHFIELD PUBLIC SCHOOLS- FRUITS, VEGETABLES, AND PROTEINS



The students at Litchfield all work together to produce fruits and vegetables for their cafeteria. They have a community greenhouse and garden and have grown more than 25 different fruits and vegetables. Students in grades 1-12 go to the greenhouse/garden at least once a week to care for the produce. They learn about planting and watering, nutritional needs, and the science applied to growing plants. When it is time to harvest, the vegetables and fruit go to the cafeteria for students to eat. Students love to eat what they grow!

Protein is important in our diet—we often eat it in the form of meat. Litchfield students also get fresh, locally grown beef on their lunch trays. The school participates in the Nebraska Beef to Schools program where local cattle producers donate an animal to be butchered and processed. This year, they are expanding to include a donated pork program too!

DIGGING DEEPER...

Litchfield students have also grown kohlrabi, swiss chard, and bok choy. What do you know about these vegetables?

DIGGING DEEPER...

A tower garden is a vertical, aeroponic system that can grow 20 plants in about three square feet without soil. Why do you think a tower garden is a good way to raise vegetables?

BLUE HILL-TOWER GARDEN AND GREENHOUSE

The Blue Hill agricultural education program has a greenhouse and a tower garden to grow produce for their school cafeteria. They grow carrots, lettuce, spring mixes, and radishes which go on the school salad bar. This year they added broccoli and strawberries. High school students teach elementary classes about the greenhouse and tower garden. Elementary students make the connection that the vegetables they eat at lunch are grown at their school. And everyone enjoys eating the fresh, healthy produce!

FOOD +FUEL

WITH SOYBEANS, WE DON'T HAVE TO CHOOSE.

U.S. soybean farmers grow versatile and renewable soybeans to help meet food, feed, and fuel demand, globally. Soybeans are one of many choices we have to meet a range of needs for protein, as well as fats and oils. That's good news, because when it comes to providing food or renewable alternatives to petroleum, we don't have to choose. Here's a look at how soybeans in the United States are being used.

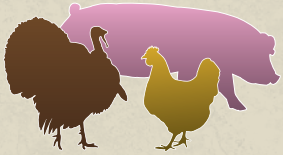
80% MEAL

The primary component of soybeans is meal.

20% OIL

The other soybean component is oil.

97% ANIMAL FEED



97% of U.S. soybean meal is used to feed poultry and livestock.

3% FOOD PRODUCTS

3% of soybean meal is used in food products like protein alternatives and soy milk.

68% FOOD

68% of soybean oil is used for frying and baking food, as a vegetable oil and as an ingredient in foods like salad dressings and margarines.

25% BIODIESEL & BIOHEAT®

25% of soybean oil is used for biodiesel and Bioheat®.

7% INDUSTRIAL USES

Less than 7% of soybean oil is converted into industrial uses like paints, plastics, and cleaners.

Nebraska Agriculture in the Classroom is a program of the Nebraska Farm Bureau Foundation whose mission is to engage youth, educators, and the general public to promote an understanding of the vital importance of agriculture in the lives of all Nebraskans. To learn more or access an electronic version of this publication, visit us at **www.nefbfoundation.org** or contact the Nebraska Farm Bureau Foundation.

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NEBRASKA AGRICULTURE IN THE CLASSROOM
NEBRASKA FARM BUREAU FOUNDATION

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