Nebraska Corn Board Funding Proposal FY 2015-2016

Submitted May 26, 2015

Table of Contents

FY 2016 PROJECT PROPOSAL
Nebraska Soybean Board

PROJECT NAME: Ag Literacy Festivals
ORGANIZATION: Nebraska Extension
ADDRESS: 211 Agricultural Hall
University of Nebraska-Lincoln
Lincoln, NE, USA 68583-0703
PROJECT LEADER: Agricultural Literacy 4-H Signature Outcome Team
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BUDGET REQUEST:

$1 from Nebraska Soybean Board per student
This is an annual request made to Nebraska Soybean Board.

PROJECT SUMMARY: *A brief statement in non-technical terms* **describing the objectives** *of the project, including how its successful completion will assist in the achievement of the state and national long range plans*

Festival Outcomes
- ✓ Youth will know where their food comes from.
- ✓ Youth will develop positive attitudes and interests regarding local agriculture.
- ✓ Youth will utilize scientific principles as they apply to agriculture.

Festival Underlying Principles
- ✓ Agriculture festivals will support Agriculture Literacy outcomes.
- ✓ There is consistency among agriculture festivals statewide.
- ✓ Stakeholder needs will be met.

Learning Objectives – CORN & SOYBEAN PRODUCTS Session
- ✓ Youth will be able to determine what products they use in their lives are from corn and soybeans.
- ✓ Youth will be able to explain how corn and soybeans are used for different purposes (human/animal/energy)

Learning Objectives – CORN & SOYBEAN PRODUCTION Session
- ✓ Youth will be able to recognize the corn and soybean production cycles.
- ✓ Youth will be able to identify the science behind the Plant Life Cycle.
- ✓ Youth will be able to apply math utilizing corn and soybean production statistics.

Learning Objectives – AGRICULTURE TECHNOLOGY Session
- ✓ Youth will be able to explain the progression of agriculture technology and how it affects corn and soybean production.
- ✓ Youth will be able to identify the importance of technology in agriculture to help farmers feed the world.

Curriculum (SEE ATTAHCED)

- ✓ 15 to 20-minute lessons (Lessons include script, PowerPoint, storyboard visual aids, and list of other visuals)
- ✓ Lesson Topics:
  - **Agriculture Technology***
  - **Corn/Soybean Production***
  - **Corn/Soybean Products***
  - Pigs/Pork
  - Beef
  - Dairy
- ✓ Additional lessons can be added based on local needs.
- ✓ If time allows, students will be briefed as an entire group after attending their final session. Part of the discussion includes encouraging the youth (and their teachers) to be more aware of the products they consume. (IE: "When you are in the grocery store with an adult, look at labels and check out the ingredients - look to see if the products contain corn and/or soybeans.") Also, they are encouraged to tell at least two persons two different things that they learned from attending the Ag Literacy Festival. This provides an opportunity of reflection.

What is the soybean message conveyed & how does your proposed project tie directly to soybeans?

Ag Literacy Festivals across the state of Nebraska provide education to youth who will share information with their family members as well as become adult consumers.

The program's outcomes are the following:

- ✓ Youth will know where their food comes from.
- ✓ Youth will develop positive attitudes and interests regarding local agriculture.
- ✓ Youth will utilize scientific principles as they apply to agriculture.

The goal is to increase youth's knowledge and understanding about agriculture concepts that includes a better understanding of our area's consistent supply of quality commodities and value-adding industries. As a result, youth will be better informed about the role agriculture plays in the state and local economy as well as in their daily lives.

TARGET AUDIENCE

3rd & 4th Grade Students

County of Participating Students:	Location Festival is Held:	Date:	# of Students	UNL Extension contact:
Buffalo	Kearney	April	475	Kerry Elsen
Buffalo, Kearney, Franklin	Kearney	April	150	Kerry Elsen
Burt, Dodge, Douglas & Washington	Washington County Fairgrounds, Arlington	April and/or May	700-800	Tracy J Behnken
Douglas and Saunders and Lancaster	Lancaster Event Center and the ARDC	April and October	1000-1600	Monte Stauffer & Karna Dam
Fillmore, Thayer, Nuckolls, sometimes Clay	Geneva	September	125-175	Brandy VanDeWalle
Holt/Boyd	O'Neill	October	100	Megan Hanefeldt
Jefferson	Fairbury	May	80-100	Darci Pesek
Lincoln. Logan. McPherson	North Platte	October	150-300	Cathy Weaver
Madison	Madison County Fairgrounds		400	Sarah Polacek
Rock	Bassett Grade School	Febuary	80	Pamela Bauer
Scottsbluff, Sioux, Dawes, Sheridan, Central Sandhills (Blaine, Grant, Hooker, Thomas), Box Butte, Cherry, Kimball, Banner, Cheyenne, Morrill	There are several locations being considered as this is a new Festival. We will choose 2 to 3 locations across our district to best meet the needs of the students	TBD	Total number of students this could impact is 2,125 students	Deb Kraenow or Jana Schwartz
Thurston & Clay	Cuming County Fairgrounds	TBD	TBD	Jennifer Hansen
Webster	Blue Hill Elementary	November	40	Carol Kumke
Total (Potential) Students			**5,345-6,445**	

The 4-H Ag Festival team is currently in the process of developing a format for Nebraska Extension faculty/staff to request funds in accordance with the state commodity boards' procedures. The plan is to have a system in place by June 2015.

PROGRESS/SUCCESS MEASURED

- ✓ Teachers will be required to complete an evaluation form that includes each session. They are to evaluate the "Increase in Knowledge" for the students in their class for each of the sessions (includes "Corn and Soybean Production", "Corn and Soybean Products" and "Ag Technology"). Teachers also provide essay question responses regarding the festival's positive impact on their students.
- ✓ Festivals organizers (Extension faculty/staff) will individual administer the evaluation form to the teachers attending the festival at their site. Results will be submitted to a state data base as well as per request for funds.
- ✓ Annually a state-wide Ag Literacy Festival report will be included in the funding proposal request.
- ✓ Evaluation tool is enclosed.

What other organization received this proposal & dollar amount requested:

The Agricultural Literacy 4-H Action Team plans to generate additional proposals for other Nebraska commodities and stakeholders based on their requested guidelines. In addition, individual festival organizers may seek local commodity groups, Farm Bureaus, and agri-businesses. In many cases, the festival budget could be more than $5 per student. At this time, the Nebraska Corn Board and the Nebraska Pork Producers Association have granted funds for the 2015-2016 school year.

Estimate the % of Nebraska Soybean Board's funding commitment towards this total project.
18% - Based on $5.50 per student and $1 funding request.

PROPOSED BUDGET SUMMARY:

Session Supplies - $1/student
Product Samples - $1/student
Mileage Stipend for Non-UNL Presenters ($0.51 per mile) - $0.50/student
Mileage Stipend for Producers ($50/producer) - $0.50/student
Lunch/Refreshments for Volunteers - $0.50/student
Student Transportation - $2/student
TOTAL = $5.50 / STUDENT

ATTACHMENTS

- ✓ Curriculum for Ag Technology
- ✓ Curriculum for Corn & Soybean Production
- ✓ Curriculum for Corn & Soybean Products
- ✓ Example of Corn & Soybean inclusion in other sessions: Beef Production
- ✓ Evaluation Form

Agriculture Technology Session

Nebraska 4-H Agriculture Festival

Brief Description: Through utilization of the agriculture technology poster series students will see the progression of agriculture technology and how it affects corn and soybean production. Upon conclusion of the presentation students will be able to identify the importance of technology in agriculture and how if helps farmers feed the world.

Materials List/Supplies:

- 5 Easels if using posters
- Projector and screen if using PowerPoint
- Posters or PowerPoint
  - ✓ How big is an acre?
  - ✓ Bushels of Corn
  - ✓ Equipment and Costs
  - ✓ Hours of Work
  - ✓ Feeding the World
- Additional visuals may include: bushel basket, ears of corn, bucket of soybeans, piece of current and past equipment, etc.
- To enhance the session, ask that a local implement dealer and/or farmer bring (the newest) equipment. Allow the students to sit in the cab/seat of the equipment. In addition, encourage the dealer or farmer to share information about technology (GPS) and its importance to agriculture.

Outcome:

- Youth will know where their food comes from.
- Youth will develop positive attitudes and interests regarding local agriculture.
- Youth will utilize scientific principles as they apply to agriculture.

Learner Objectives:

- Youth are able to explain the progression of agriculture technology and how it affects corn and soybean production.
- Youth are able to identify the importance of technology in agriculture to help farmers feed the world.

TEACHING THROUGH POSTER SERIES:

- ✓ Use easels to display all of the posters. NOTE: Do not display the "How Big is An Acre" at the start of the session.
- ✓ Apply all of the tags (with Velcro) to the posters prior to the student arrival.
- ✓ Additional visuals may include: bushel basket, ears of corn, bucket of soybeans, piece of current and past equipment, etc.
- ✓ To enhance the session, ask that a local implement dealer and/or farmer bring (the newest) equipment. Allow the students to sit in the cab/seat of the equipment. In addition, encourage the dealer or farmer to share information about technology (GPS) and its importance to agriculture.

POSTER 1: "HOW BIG IS AN ACRE"

- Begin by asking the students if they know (or can guess) how big an acre is.
- Once you have had several guesses OR the correct answer, turn the poster over and talk about it. Let them know how acres are used as a common term for land in agriculture and how it is just smaller than a football field.

Discuss how TECHNOLOGY has changed and helped agriculture be more productive. The series of posters allow the students to understand technology over the past 150+ years – from 1850 to today (in 40 year increments).

POSTER 2: "BUSHELS of CORN"

OPTION: If you have plenty of time, also cover the kernels in the "Ag Technology" column. If you have less time, leave the kernel information revealed and discuss it as you move down the poster through the years. The kernels explain why production did or did not increase over the 40-year increments.

- Explain and refer to the timeline that was used to create the poster – 1850 to today (every 40 years).
- Explain how big a bushel is OR best is to have a bushel basket so they can visually see it.
- Start with 1850 and ask the students to guess how many bushels of corn per acre were produced in 1850.
- CONTINUE the process with the other dates: 1890, 1930, 1970 and today. The student will most likely guess a higher number for 1890 and 1930 and may be surprise of the same amount produced. NOTE: **1900 – 1920:** Farmers went to "Corn Shows" at county and state fairs. The ears of corn were judged on uniform appearance and NOT bushels of corn per acre.

- CONTINUE the process with the other dates: 1890, 1930, 1970 and today. Be sure to discuss and refer to the (column) kernels of Ag Technology History.

  AG TECHNOLOGY HISTORY:

  1900 – 1920: Farmers went to "Corn Shows" at county and state fairs. The ears of corn were judged on uniform appearance and NOT bushels of corn per acre.

  1920s - 1930s: Fertilizers were developed and were used to increase production – bushels of corn per acre. Tractors and other mechanized tools also appeared during this time.

  1930s - 1940s: Scientists observed pollination of corn plants and started developing better seed corn called HYBRIDS that produced more corn per acre.

  1950s – 1960s: The center pivot irrigation system was being developed in Nebraska. Irrigation helped increase production – more corn per acre.

  TODAY: Scientists continue to research better ways to increase corn production in order to feed the growing world population.
- For the final date "TODAY", be sure to point out to the students that Nebraska has a higher (by 10 bushels) production average then the national average. Have the students give a cheer and be proud of Nebraska agriculture!

POSTER 3: "EQUIPMENT & COSTS"

- Discuss how technology of equipment has changed over the years.
- Start with 1850 and point out what equipment/technology was used (in the white box).
- Ask the students to guess what a horse was worth in 1850. Once you had one (or a few guesses), remove the tag from the poster to reveal the price.
- CONTINUE the process with the other dates: 1890, 1930, 1970 and today. Discuss inflation over the years. Also discuss HORSEPOWER and how the increased size of the tractor allowed the farmer to use increased size of the equipment listed (in the white boxes).
- NOTE: The tractors pictured/priced and the equipment listed (in the white boxes) are the average for the year listed.

POSTER 4: "HOURS of WORK"

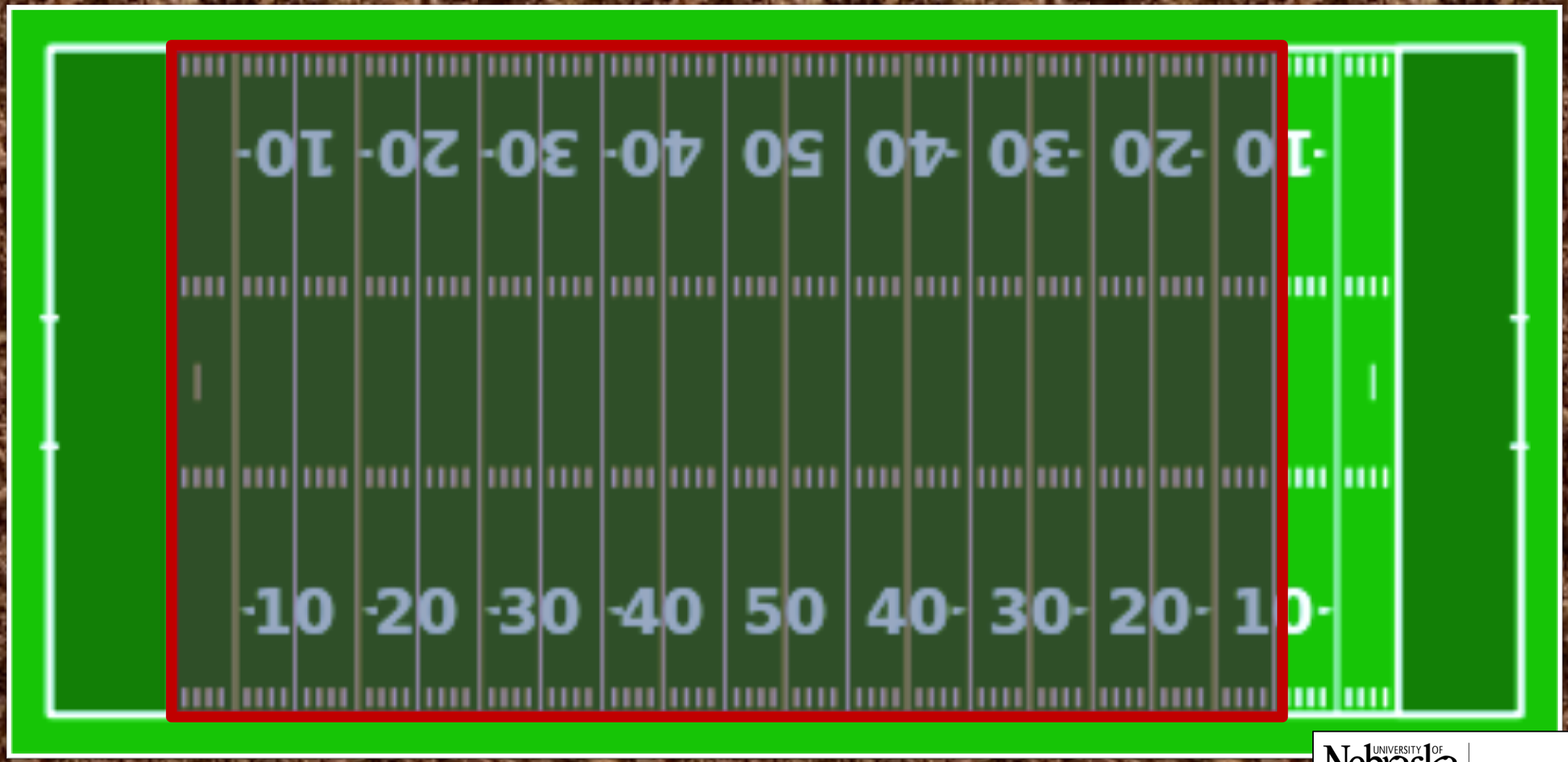
- The poster reflects the same timeline (1890-today) and highlights how many hours of work it takes to produce one acre of corn – from tilling to harvest.
- Remind the students how technology effected equipment and how that had an impact on labor (work).
- Start with what they can identify with – hours of an average school day (7).
- Then begin with 1850 and have the students guess the number of hours it took to produce one acre (referring to "ACRE" poster). Ask one student to guess and have him/her remove the tag from the poster to reveal the hours.
- CONTINUE the process with the other dates: 1890, 1930, 1970 and today. Be sure to discuss how TECHNOLOGY has increased productivity that will help us to feed the growing world.

POSTER 5: "FEEDING THE WORLD"

NOTE: If time is short, this poster could be quickly discussed.

- Today's world population is 7B and projected to be 9B by the year 2050.
- Compare the "US Population" to the "Farmers in the US" and how the percentage of farmers is decreasing in part due to technology and efficiency. TODAY – 2% of the population is US farmers and in Nebraska 5% of the population are farmers.
- Refer to the "US Farmer Feeds" column and how ag technology has increased production.
- HOWEVER, share with the students that the population growth puts an increase demand on ag technology in order for us to feed the world. Ag technology includes – equipment, animal and plant genetics, fuel efficiencies, product and by-product development, water usage efficiencies, etc. … include more based on your knowledge and background.

HOW BIG IS AN ACRE?



Nebraska Lincoln UNIVERSITY OF EXTENSION

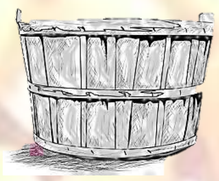
43,560 square feet

Almost the size of a football field. Outlined in RED.

10.2014

BUSHELS of CORN

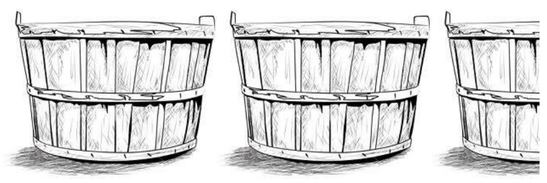
1 bushel of corn = 56 pounds

 = 10 bushels

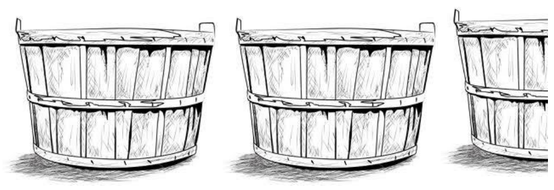
Ag Technology	Timeline	Bushels of Corn per Acre

1900 - 1920
Farmers went to "Corn Shows" at county and state fairs. The ears of corn were judged on uniform appearance and NOT bushels of corn per acre.

1850

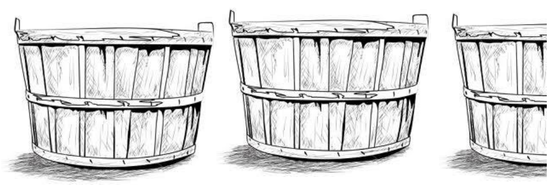
 = 25

1890

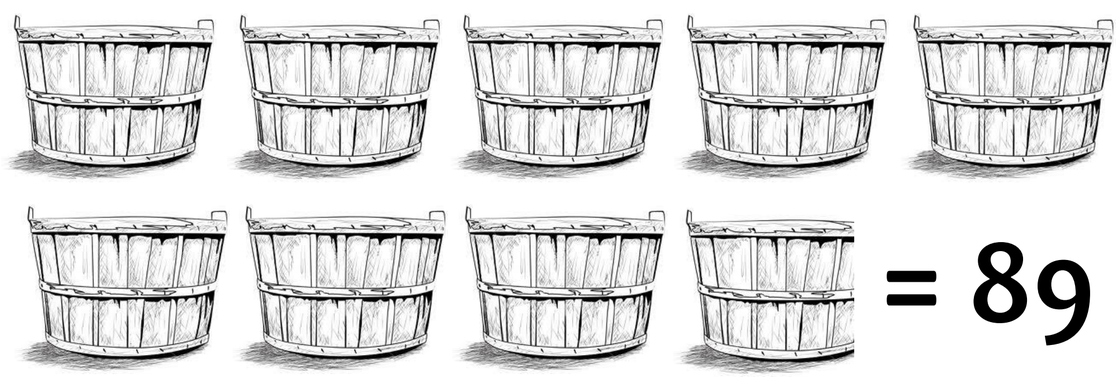
 = 25

1920s - 1930s
Fertilizers were developed and were used to increase production – bushels of corn per acre. Tractors and other mechanized tools also appeared during this time.

1930

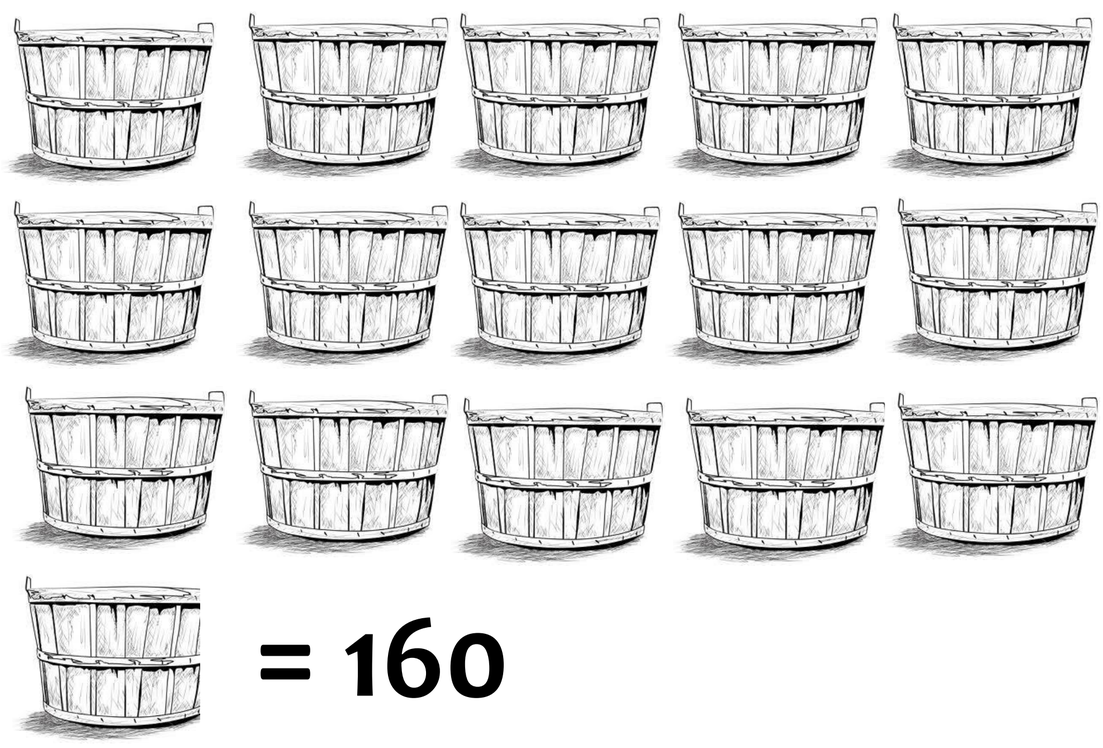
 = 25

1970

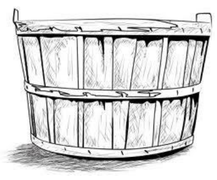
 = 89

1930s - 1940s
Scientists observed pollination of corn plants and started developing better seed corn called HYBRIDS that produced more corn per acre.

TODAY

 = 160

In Nebraska
(+ 10 bushels)

 = 170

1950s – 1960s
The center pivot irrigation system was being developed in Nebraska. Irrigation helped increase production – more corn per acre.

TODAY
Scientists continue to research better ways to increase corn production in order to feed the growing world population.

How many bushels?

How many bushels?

How many bushels?

How many bushels?

How many bushels?

How many bushels?

How many bushels?


1900 - 1920
What was
going on?


1920s – 1930s
What was
going on?


1950s - 1960s
What was
going on?


1930s – 1940s
What was
going on?


TODAY
What is
going on?

EQUIPMENT & COST$

Used for Planting and Harvesting Corn & Soybeans

TIMELINE

1850

Horses
Walking Plow & Harrow
Hand Planting

Horse = $20

1890

Horses
Gang Plow
Harrow
Seeder
Wagons

Horse = $65

1930

Tractor = $1,000
25 Horsepower

Tractor
2-bottom Gang Plow
7-foot Tandem Disk
4-section Harrow
2-row Planter
Cultivator
Picker
Wagons & Trucks

1970

Tractors
5-bottom Plow
20-foot Tandem Disk
4-row Planter
20-foot Herbicide Applicator
12-foot Self-propelled Combine
Wagons & Trucks

Tractor = $10,500
95 Horsepower

TODAY

Tractor = $175,000
225 Horsepower

Tractors
36-foot Disk/Harrow
40-foot long, 16-row Planter
100-foot Herbicide Applicator
30-foot Self-propelled Combine
Wagons, Trucks & Semi-trucks

University of Nebraska Lincoln Extension

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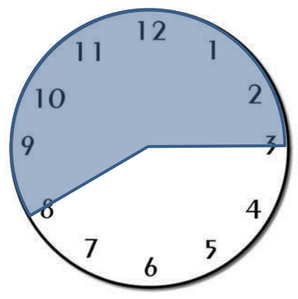
$$$$$

10.2014

HOURS of WORK

to produce one acre of corn.

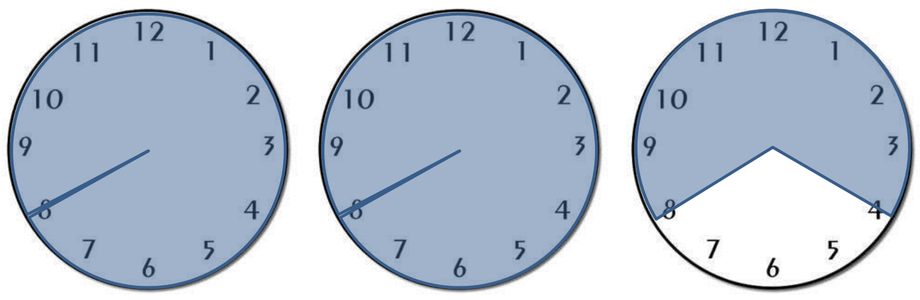
AVERAGE SCHOOL DAY
8:00 a.m. – 3:00 p.m.



7 hours

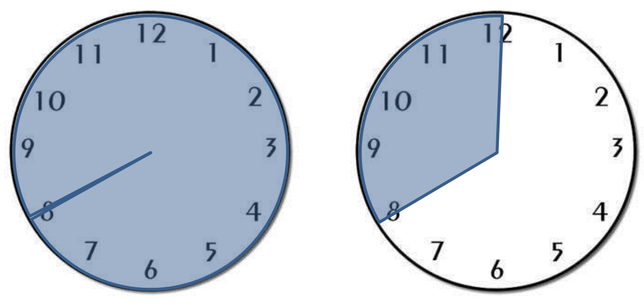
TIMELINE

1850



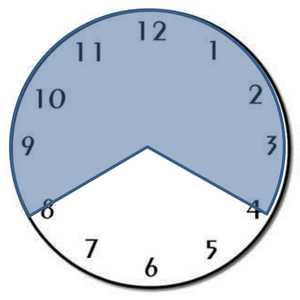
32 hours

1890



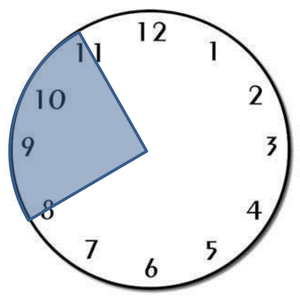
16 hours

1930



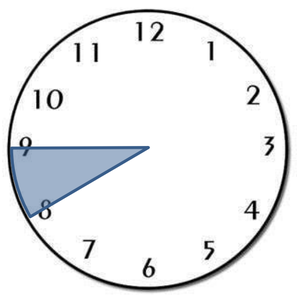
8 hours

1970



3 hours

TODAY



1 hour

University of Nebraska Lincoln | EXTENSION

10.2014

How many hours?

How many hours?

How many hours?

How many hours?

How many hours?

FEEDING THE WORLD

WORLD POPULATION
Today = 7,000,000,000
2050 = 9,000,000,000

TIMELINE	U.S. POPULATION	FARMERS IN U.S.	WORLDWIDE ONE (1) U.S. FARMER FED/FEEDS
1850	23,200,000	11,680,000	4 people*
1890	62,900,000	29,400,000	6 people*
1930	122,800,000	30,500,000	10 people*
1970	204,300,000	9,700,000	72 people
TODAY	313,000,000	6,260,000	155 people
	in your state or remove	in your state or remove	
	# or remove	# or remove	

*Methodology of data collection unknown.

U.S. POPULATION

U.S. POPULATION

U.S. POPULATION

U.S. POPULATION

U.S. POPULATION

NEBRASKA POPULATION

PEOPLE FED BY
ONE U.S. FARMER

PEOPLE FED BY
ONE U.S. FARMER

PEOPLE FED BY
ONE U.S. FARMER

PEOPLE FED BY
ONE U.S. FARMER

PEOPLE FED BY
ONE U.S. FARMER

FARMERS in U.S.

FARMERS in U.S.

FARMERS in U.S.

FARMERS in U.S.

FARMERS in U.S.

FARMERS in NEBRASKA

Corn & Soybean Production

Nebraska 4-H Agriculture Festival

Brief Description: Students will learn about the corn and soybean production cycles and be able to identify the plant life cycle. In this presentation students will utilize math skills to explore corn and soybean statistics.

Materials List/Supplies:

- ✓ Easel if using posters
- ✓ Projector, screen and speakers if using PowerPoint
- ✓ Posters or PowerPoint-
  - o One Farmer Feeds
  - o How much is an acre?
  - o Corn Stats
  - o Bushels of Corn
  - o Soybean Bushels/Pods/Seeds
  - o Crop Production
- ✓ Additional visuals may include: bushel basket, corn plant, soybean plant, (or silk corn and soybean plans) ears of corn, bucket of soybeans

Outcome:

- Youth will know where their food comes from.
- Youth will develop positive attitudes and interests regarding local agriculture.
- Youth will utilize scientific principles as they apply to agriculture.

Learner Objectives:

- Youth are able to recognize the corn and soybean production cycles.
- Youth are able to identify the science behind the Plant Life Cycle.
- Youth are able to apply math utilizing corn and soybean production statistics.

Background Information:

- ✓ Use easels to display the posters.

Anticipatory Set:

Slide 1: Agriculture is very important to the State of Nebraska. 93% of the land in Nebraska is used for agriculture (either farming or ranching). There are parts of Nebraska where it is either to hot or too dry, the soil is too sandy, and can't raise food crops but can grow grass to feed animals.

The average size of a Nebraska Farm is 500 to 1000 acres. We will talk about an acre in a minute.

One farmer can raise enough food to feed 155 people and after we talk about agriculture I think you will be able to understand how 1 farmer can feed that many people.

Slide 2: Can anyone tell me "What is an Acre"? An acre is about the size of a Football Field. There is another definition of an acre and that is what a farmer uses most often. The mathematical definition for an acre is 43,560 square feet. If you take a square foot, it is one foot tall by one foot wide and start counting on the corner of the football field when you get to 43,560 square feet that will be one acre.

Activity, Content & Instructions:

Slide 3. We will talk about corn first. We plant about 95 million acres of corn in the USA. In Nebraska we plant about 10 million acres of corn. We plant about 30,000 kernels of corn on an acre (football field). We harvest corn in September – October.

When we talk about soybeans we plant about 76 million acres of soybeans in the USA. In Nebraska we plant 5 million acres of soybeans. We plant more corn in Nebraska because corn can grow better on sandy soils and we have some Nebraska soils that contain a lot of sand.

Slide 4. Let's pretend that a farmer takes one kernel of corn. When does the farmer plant corn? In the spring, late April or early May. If the farmer plants 30,000 kernels of corn how many ears will the farmer get? (Show corn plant with one ear on it.) The farmer would get 30,000 ears. How many kernels of corn do you get from one ear? 450 kernels. If we multiply 30,000 kernels times 450 kernels per ear how many kernels do we get from one acre? We get 10,920, 000 kernels per acre.

We need to talk about another definition. What is a bushel? A bushel is important because that is how a farmer sells their corn and soybean and other food items. A bushel is about the size of a small laundry basket. (Show bushel basket if one is available) A bushel basket is always the same size (a volume). Can you tell me how many pounds of corn there is in one bushel? There is a mathematical definition for a bushel of corn and it is 56 pounds of corn per bushel. If a farmer sell his corn anywhere is the U,S. the buyer know they are getting 56 pound of corn. Can someone tell me how much money a farmer will get for 1 bushel of corn? (Current Market Price) If a farmer gets $4 for each bushel and a farmer can raise 150 bushels on an acre how many dollars can a farmer get for all the corn from one acre? ($600 or whatever the answer is) (You can ask the youth to calculate the amount of total dollars if they are old enough).

Slide 5. Over the years when farmers first started to grow corn they wanted ears that looked good and were large. In 1850 a farmer could raise about 25 bushels of corn per acre. In 1890 and 1930 they could raise about the same 25 bushel. Farmers then decided that they could get more money if they looked at how much they raised and not how the ears looks and hybrid seed corn was developed. Farmers could raise about 89 bushels per acre by 1970. As fertilizer and hybrid seed was improved farmers increased the amount of corn they could raise to about 125 bushels per acre across the U.S. and in Nebraska a farmer can raise about 160 bushels of corn today.

Slide 6. Now let's compare raising soybeans to raising corn. When a farmer raises soybeans what do they get when they plant a soybean seed? Do they get ears of soybeans? No they get pods. Do they get one ear per plant? No they get about 20 pods per plant and in the pod they get 3 seeds per pod. A farmer plants about 150,000 seed per acre (football field). Compare the 150,000 soybean seeds per acre with the 30,000 seeds for corn. Since the soybean plants are smaller you can plant more plants per acre for soybeans. We multiply 60 seeds per plant by 150,000 seeds per acre you get 8,400,000 seeds per acre. Compare corn at about 11 million kernels and 8.5 million soybean seeds. Since the farmer would like to get about the same amount of money for the two crops we know that we will need more dollars per bushel if the farmer is going to raise soybeans. We have the same bushel basket and when we fill it with soybeans how many pounds will a bushel of soybeans hold? The mathematical definition for a bushel of soybeans is 60 pounds. Anywhere a farmer sells a bushel of soybean in the U.S. it will always be 60 pounds. How much will a farmer get when they sell a bushel of soybeans? (Current market price times 50 bushels per acre). If a farmer raises 50 bushels of soybeans per acre how much will they get for the soybeans from the acre? If the market is $14.00 per bushel and you multiply 50 bushels per acre the farmer can get about $600 for an acre of soybeans. About the same as for corn.

Slide 7. The $600 per acre is not total profit. The farmer has to buy fuel, seed, fertilizer and equipment to plant and harvest the crops.

There is another reason farmers like to plant soybeans. Soybeans can make their own fertilizer. The soybean plant belongs to a family of plant called legumes. Legumes can absorb nitrogen out of the air that we breathe and take the nitrogen into the leaves, down the stems and into the roots where there are bacteria called rhizobia that make nodules on the roots that produce fertilizer. Not only can the soybean make enough fertilizer to grow itself it leaves some fertilizer in the soil after harvest so the next crop can use it. That is why a farmer likes to do something called rotation of crops. The farmer can plant soybeans then corn then soybeans then corn etc. That way the corn crop can use the fertilizer left from the soybeans the year before.

The corn and soybean plants do other things for us as well. Can someone tell me what is the process when plants use sunlight energy along with chlorophyll to produce plant material? Photosynthesis. If we stand in the sun all we get is sunburned but plant can use the sunlight energy to produce food for us.

The plants also do something else. Can someone tell me what is the name of the gas in the air that we breathe out and that plants take in? Co2. Carbon dioxide is a greenhouse gas and plants can take the carbon dioxide out of the air and put it into the plant. This process has a big long name: carbon sequestration. That means that plants can take carbon out of the air and tie it up in the plants in the carbon cycle.

The plants can also do another thing. Can someone tell me what is the gas in the air that we breathe in that plants give off? Oxygen. So plants do a lot of things besides just product food for us. They can do photosynthesis, take carbon out of the air we breathe and put oxygen back into the air we breathe.

Slide 8. Here is a short video clip that shows how a farmer plants corn and soybeans. The planter plants the crops in rows. I want you to watch for the computer in the tractor cab that counts the number of seeds the farmer is planting. The planter has electric eyes that count the number of seeds the farmer is planting per acre so the farmer can adjust the number of seeds so they get 30,000 kernels of corn and 150,000 soybean seeds.

Slide 9. Here is a short video clip that shows how a farmer harvests soybeans. Notice the front head on the combine. We use the same machine called a combine to harvest corn and soybeans. The soybean head cuts the whole plant and takes it into the machine where it rubs the plants together and lets the heavy seed drop to the bottom of the machine and then is placed in the bin on top of the machine. The light material is blown out the back of the machine by a big fan.

Slide 10. Here is a short video clip that shows a farmer harvesting corn. Notice the front head on the combine. It has something called snoots that travel between the rows of corn and just pull the ear off the plant. Only the ear is taken into the combine. The ears of corn are rubbed together and the heavy grain drops into the bottom of the machine. It is then moved into the bin on top of the machine. (The dark sided thing on the top of the combine). The light material is blown out the back of the machine by a big fan. The combine then drives up to a grain cart (wagon) and then the grain cart dumps the grain into a truck that takes the grain to the elevator where the farmer can sell it.

I hope you have had a good time at the Ag Literacy Festival and this will help you understand how one farmer can produce enough food to feed 155 people.

Reflection Using the Experiential Learning Model:

Share/Process:

- *What is photosynthesis?*
- *Why do farmers rotate corn and soybeans?*

Generalize:

- *How are corn and soybeans different?*
- *How are they the same?*

Apply:

- *What does this matter to us?/Why is this important?*
- *What kinds of skills do farmers need to be good at?*

IANR

93%

of Nebraska's Land is used for Farming and Ranching

The average farm size is

500-1,000 acres

One farmer produces enough food to feed

129 people

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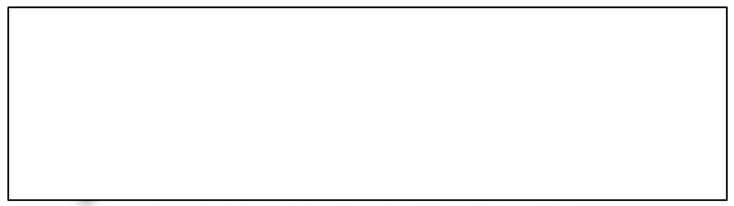
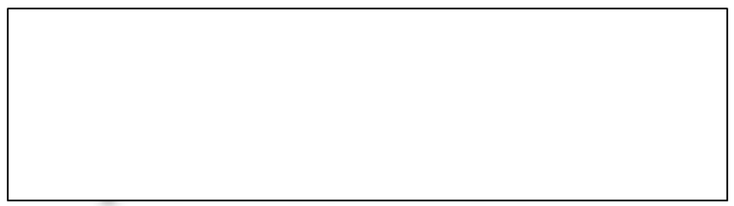
HOW BIG IS AN ACRE?

Photo by Ken Dewey





IANR

95 million acres planted in USA

10 million acres planted in Nebr.

Planted
Late April to Mid-May
30,000 seeds
per acre

Harvested in September-October

76 million acres planted in USA

5 million acres planted in Nebr.

Planted
Mid-May to Mid-June
150,000 seeds
per acre

Harvested in September-October

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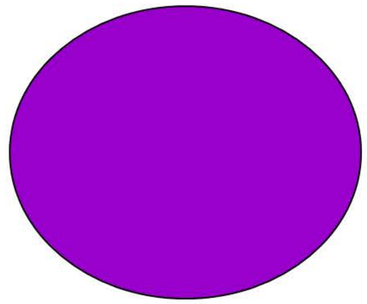

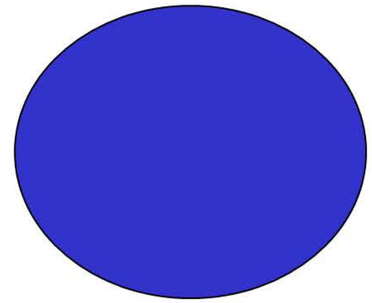

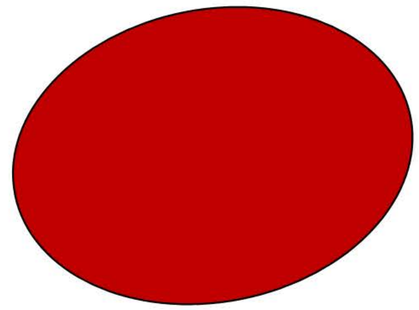

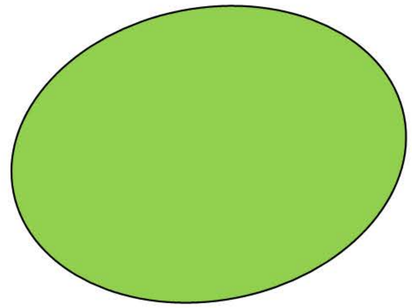

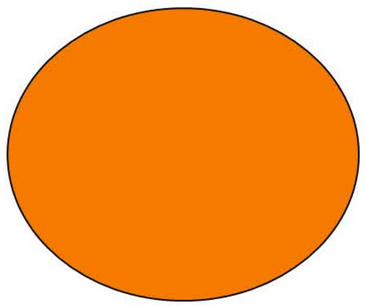

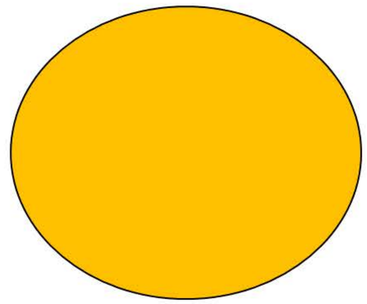

corn

Bushels per acre

150

Pounds per acre

8,400

450

Kernels per ear

10,920,000

Kernels per acre

1,300

Kernels per pound

56

Pounds per bushel

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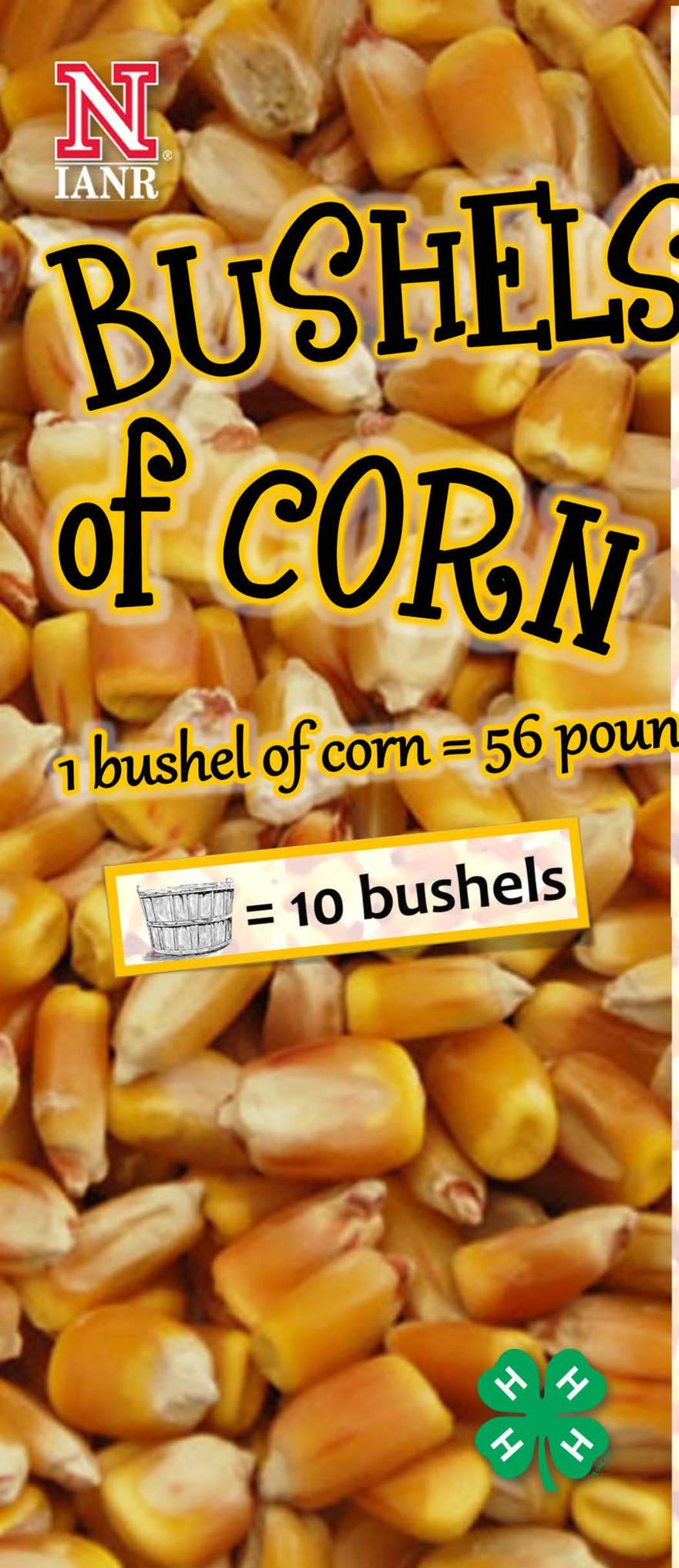

BUSHELS of CORN

1 bushel of corn = 56 pounds

= 10 bushels

Ag Technology	Timeline	Bushels of Corn per Acre
1900 - 1920 Farmers went to "Corn Shows" at county and state fairs. The ears of corn were judged on uniform appearance and NOT bushels of corn per acre.	1850	= 25
	1890	= 25
1920s - 1930s Scientists observed pollination of corn plants and started developing better seed corn called HYBRIDS that produced more corn per acre.	1930	= 25
	1970	= 89
1920s - 1930s Fertilizers were developed and were used to increase production – bushels of corn per acre. Tractors and other mechanized tools also appeared during this time.		
1950s – 1960s The center pivot irrigation system was being developed in Nebraska. Irrigation helped increase production – more corn per acre.	TODAY	= 125 In Nebraska **PLUS** = 160
TODAY Scientists continue to research better ways to increase corn production in order to feed the growing world population.		

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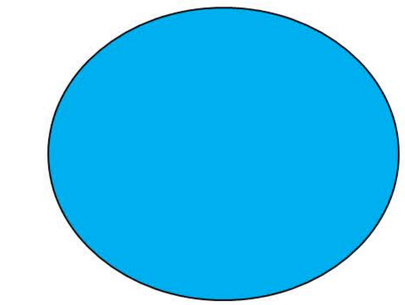

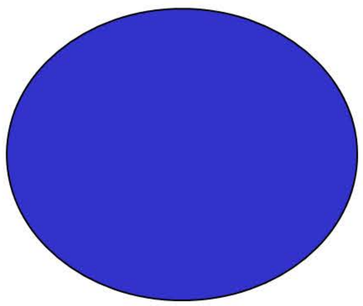

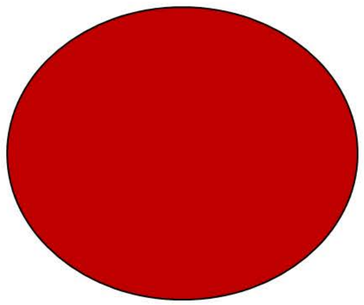

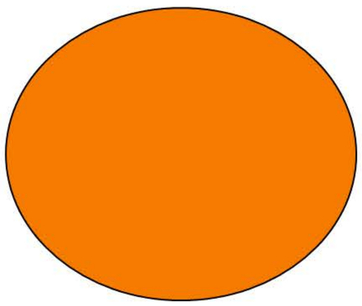

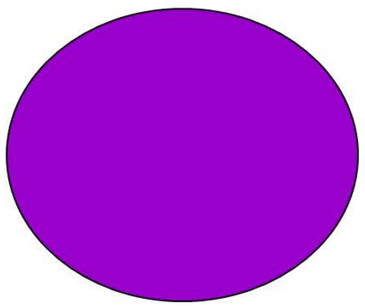

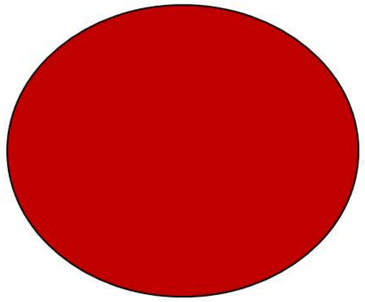

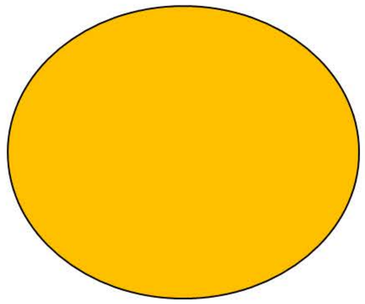

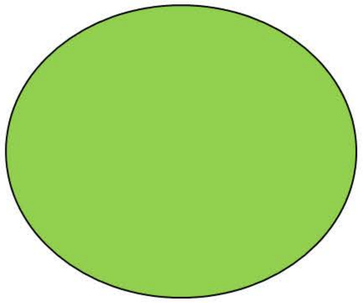

THE SOYBEAN

Pounds per bushel	60
Bushels per acre	50
Pounds per acre	3,000
Pods per plant	20
Seeds inside	3
Seeds per plant	60
Seeds per acre	8,400,000
Seeds per pound	2,800

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- Control weeds & fertilize
- Get the soil ready to plant
- Plant
- Control weeds and insects
- Irrigate
- Harvest
- Sell, store, or make the crop into food and byproducts

Crops need sunlight, water, nutrients, and carbon dioxide to grow.

Soil is the "grocery store". It is where the roots absorb nutrients & water.

Crops release oxygen into the atmosphere that is used by people and animals.

$ - Land, Taxes, Equipment, Fuel, Labor, Insurance, Chemicals, Irrigation, Fertilizer, Seed

Corn & Soybean Products

Nebraska 4-H Agriculture Festival

Brief Description: Do you know what is in that snack you are eating? Is that made for a human or animal? Answer these questions and more as you dig deeper into all of the by-products made from corn and soybean!

Grade Level: 3rd-5th grades

Skills: Students will be able to identify what daily products they use have corn and/or soybean by-products in them. They will also be able to differentiate between human, animal, and energy consumption.

Materials List/Supplies:

- 2 sets of by-product pictures (25 pictures per set; one or two sets depending on group size)
- Answer Key
- Tape
- Real-life examples of by-products (optional)
- PowerPoint (optional)

Time Needed: 20 minutes (can easily lengthen by expanding discussion after each round)

Nebraska Education Standard(s):

SC5.4.2.c: Identify how Earth materials are used (fuels, building materials, sustaining plant life)
SC5.1.2.b: Recognize that new discoveries are always being made which impact scientific knowledge

Outcome:

- Youth will know where their food comes from.
- Youth will develop positive attitudes and interests regarding local agriculture.
- Youth will utilize scientific principles as they apply to agriculture.

Learner Objectives:

- Youth will be able to determine what products they use in their lives are from corn and soybeans.
- Youth will be able to explain how different by-products are used for different purposes (human/animal/energy)

Vocabulary:

- By-products
- Consumption
- Energy
- Human
- Animal

Life Skills: Teamwork, Self-motivation, self-discipline, healthy lifestyle choices, learning to learn, decision making, problem solving, critical thinking, wise use of resources, communication, cooperation, social skills

Suggested Group Size: 20-50

Background Information: Provide additional information for instructors teaching your lesson. Include anything that someone outside of the field you are developing a lesson plan for may need to know or understand better.

Anticipatory Set: Presenters can have a variety of products to display. Some can be made from corn by-products, some with soybean by-products, and some that contain both. Pass out the products and have youth in groups of 2-3 explain what they use that product for and what they know about it. Lead discussion toward how each of these products contains corn and/or soybean by-products.

Activity, Content & Instructions:

Introduction of Presenters (2 min)
Anticipatory Set visuals (3 min)
Pass out pictures to students (2 min)
Round 1 (1 min)
Round 1 Discussion (4 min)
Round 2 (1 min)
Round 2 Discussion (4 min)
Wrap-Up/Review/Questions (3 min)

In round 1, direct students to determine what their product is made of (majority), they must decide if they are a by-product of corn or soybeans. Give them two spots to stand based on their contents.

Discuss 10-15 of the products if they are in the right category or not. If you have a longer session, you can charge the groups with the responsibility to review everyone in their group and make sure they belong there.

In round 2, direct students to three different corners. One is if they are used for human consumption, one for animal consumption, and one for energy consumption.

Discuss 10-15 different products (make sure you discuss each student's product in at least one session). *Ex. What kind of animals consume this product?; What type of energy uses this product?*

Reflection using the Experiential Learning Model- Providing an experience alone does not create experiential learning. Experiences lead to learning if the participant understands what happened, sees patterns of observations, generalizes from those observations and understands how to use the generalization again in a new situation. Write questions to ensure reflection. Share: the results, reactions, observations publicly. Process: by discussing, looking a the experience; analyze, reflect. Generalize: to connect the experience to real-world examples. Apply: what was learned to a similar or different situation

Share:

Questions should address:
How did we first organize our products?
What part of the experience was the most difficult?
What was the easiest for you?
How did we organize our products the second time?

Process:

Questions should address:
How did you determine if your product was made with corn or soybeans?
How did you decide what consumption process your product was used for?
Why is it important to make a decision?

Generalize:

Questions should address:
Why is it important to know what is in the products we use and food we eat?
What are some other products you think have corn and/or soybeans in them?
What similar experiences they have had with having to make a decision like you did today?

Apply:

Questions should address:
What is one product you will go home and look to see if it has corn and/or soybeans in it?
How they can use what they learned?

Conclusion/Final Instructions: Have each student tell you one product they remember from today and if it is used for human, animal, or energy consumption as they leave. If you are short on time, pick three to five pictures to hold up one at a time and have students tell you as a group.

References: Use APA to cite any references you used in designing your lesson plan.

Hendricks (1996). *Targeting Life Skills model*. Retrieved from http://ucce.ucdavis.edu/files/repository/calag/fig6304p217.jpg

Retrieved from http://iconbug.com/detail/icon/3451/soy-pod-and-beans/

Retrieved from http://www.clipartsfree.net/tag/bot.html

Retrieved from http://www.nebraskacorn.org/main-navigation/corn-production-uses/uses-of-corn/

Nebraska 4-H Agriculture Festival

Corn & Soybean Products

University of Nebraska–Lincoln

Nebraska 4-H Agriculture Festival

What do these items have in common?

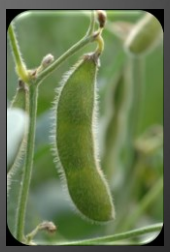
University of Nebraska–Lincoln

Corn and Soybean Product Highlights

- Corn is a key ingredient in over 4,200 products!
- Soybean oil is used in many products such as ink, paints, soaps and cosmetics!
- Nebraska is the top popcorn producing state!
- 5th largest soybean producing state

Nebraska University of Nebraska Lincoln EXTENSION Know how. Know now.

Let's play a game!



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Uses: Corn & Soybean Products

People

Animals

Energy

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Nebraska Lincoln EXTENSION Know how. Know now.

Extension is a Division of the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln cooperating with the Counties and the United States Department of Agriculture.

The 4-H Youth Development program abides with the nondiscrimination policies of the University of Nebraska–Lincoln and the United States Department of Agriculture.

University of Nebraska–Lincoln

IANR


12
Tortillas
Gluten Free
HEAT BEFORE USING
World's Best-Selling Tortilla
The Authentic Tradition™
MISSION
White Corn Tortillas
CERTIFIED

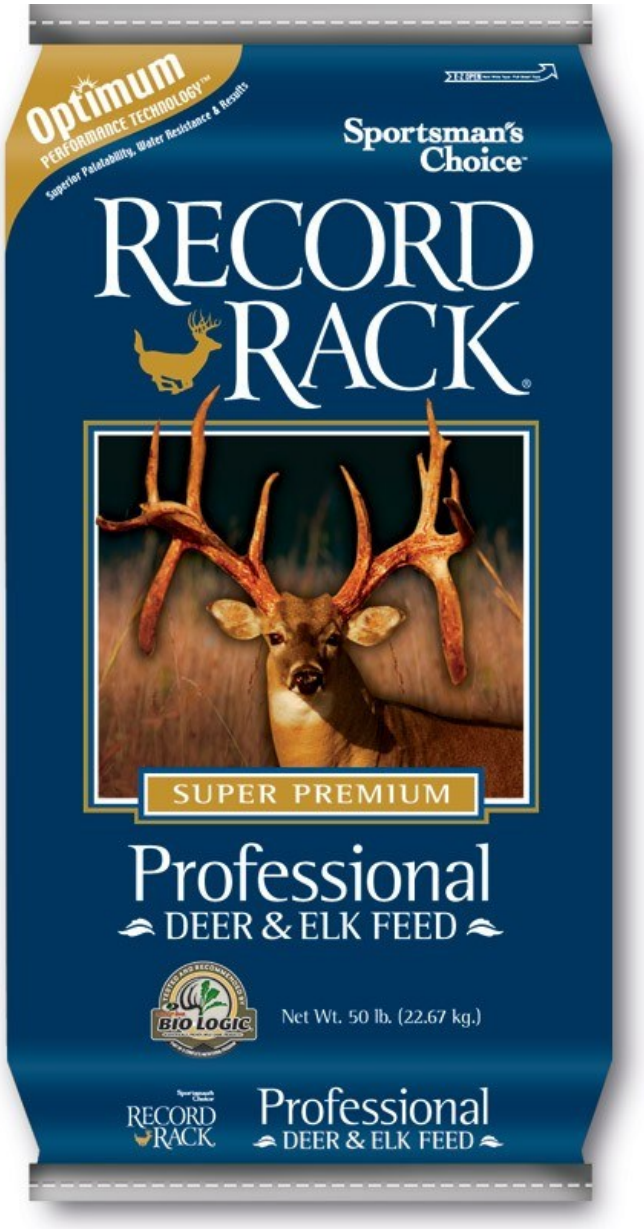

VALUE SIZE
Calories 110
Saturated Fat 0g 0%
Sodium 220mg 9%
Sugars 4g
Vitamin A 10%
Vitamin C 10%
Per 1 cup serving
Kellogg's
Crispix
CEREAL
Crispy Rice
ON ONE SIDE
Crunchy Corn
ON THE OTHER
New
Recipe
on Back
CEREAL
NET WT 17.9 OZ
(1 LB 1.9 OZ) (507g)


BLACK
tri-colour
ink
cartridge


NEW SLIM PACK & IMPROVED FLAVOR!
WRIGLEY'S
DOUBLEMINT
15 STICKS GUM
Naturally and Artificially Flavored
NEW SLIM PACK™
WRIGLEY'S
Juicy Fruit
15 STICKS GUM
NEW SLIM PACK & IMPROVED FLAVOR!
WRIGLEY'S
Big Red
CINNAMON
15 STICKS GUM
NEW SLIM PACK & IMPROVED FLAVOR!
WRIGLEY'S
Winterfresh
15 STICKS GUM
NEW SLIM PACK & IMPROVED FLAVOR!
WRIGLEY'S
SPEARMINT
Naturally and Artificially Flavored
15 STICKS GUM


C&H
Pure
CANE
SUGAR
CONFECTIONERS
POWDERED
100%
Pure Cane
contains
NO BEET
sugar
NET WT 2 LB (32 oz) 907 g
C&H
Pure
CANE SUGAR
CONFECTIONERS POWDERED

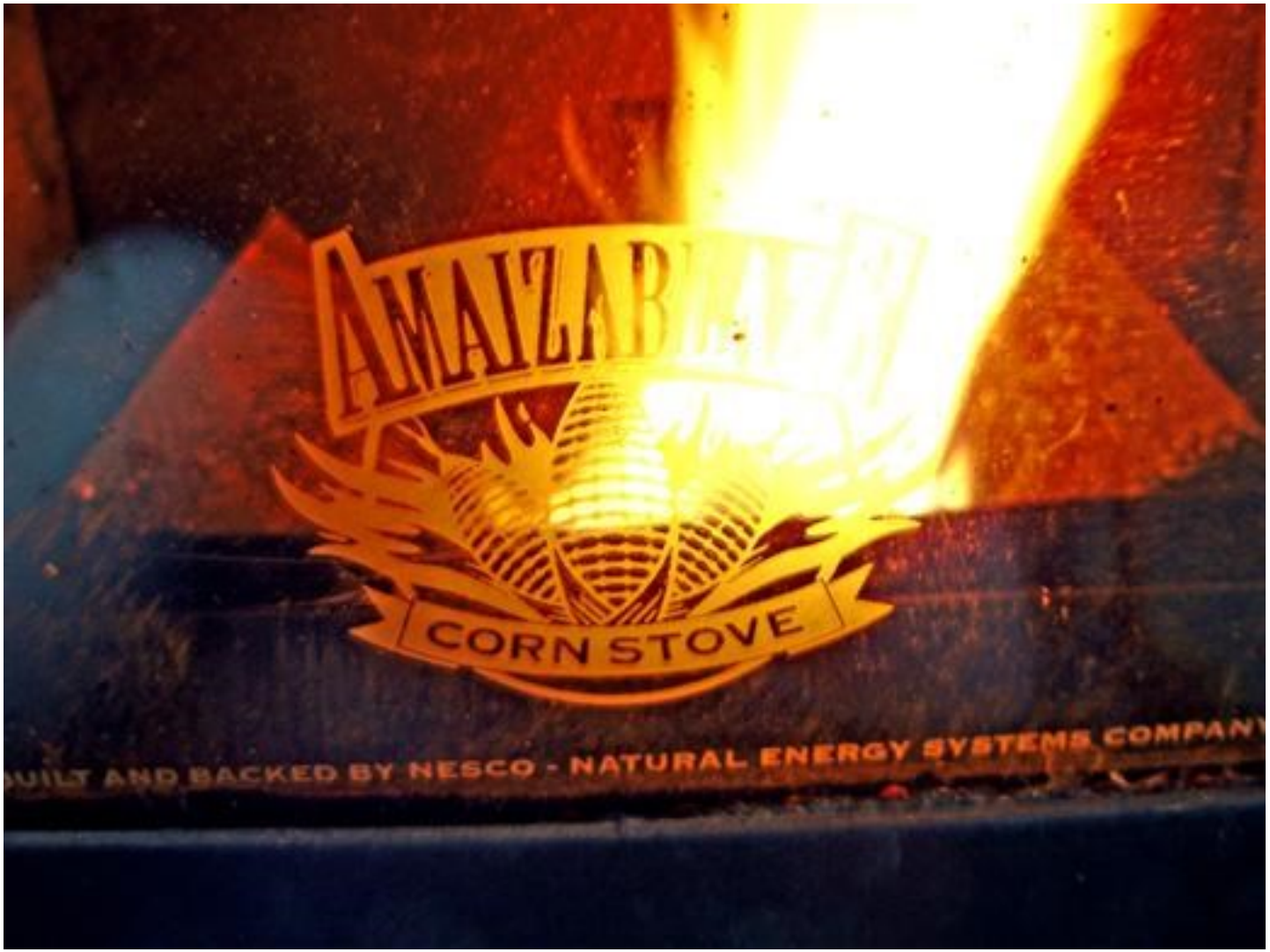

0 Grams
Trans Fat
Crisco
Pure Vegetable Oil


Optimum
PERFORMANCE TECHNOLOGY™
Superior Palatability, Water Resistance & Results
Sportsman's Choice
RECORD RACK
SUPER PREMIUM
Professional
DEER & ELK FEED
BIO LOGIC
Net Wt. 50 lb. (22.67 kg.)
RECORD RACK
Professional
DEER & ELK FEED


SUGUNA
FEEDS
Poultry
Revolution
in
Nutrition
FROM 25 DAYS ONWARDS
BROILER FINISHER
(BF)
USE NO HOOKS
1800 1034 343


Wild Delight
Blended For
SQUIRRELS
And Other Outdoor Pets
WILDLIFE FORMULA
CRUNCH N' NUT
SQUIRREL FOOD
A special blend of premium ingredients for squirrels and other wildlife.
Attracts squirrels, chipmunks, rabbits and other backyard wildlife.
Helping To End Breast Cancer
NET WT. 8 lbs. (3.62 kg)
FREQUENT BUYER CLUB
Buy 10 Get 1 Free!
See back for details.


IAMS
Life's Better
IAMS MiniChunks
1+ YEARS / 1 AN OU PLUS
PROACTIVE HEALTH
✓ Select Natural Ingredients with Added Vitamins, Minerals and Amino Acids
✓ No Fillers or Artificial Preservatives
✓ 100% Complete and Balanced for Maintenance
100% Satisfaction Guaranteed*
✓ Ingrédients naturels de choix enrichis de vitamines, minéraux et acides aminés
✓ Sans agents de conservation artificiels ni agents de remplissage
✓ Complète et équilibrée à 100 % pour le maintien de la santé
Satisfaction garantie à 100 %*
PREMIUM DOG FOOD
NOURRITURE DE QUALITÉ SUPÉRIEURE POUR CHIENS
NET WT. / POIDS NET : 17.5 lbs. (7,94 kg)


CORN STOVE
BUILT AND BACKED BY NESCO - NATURAL ENERGY SYSTEMS COMPANY


LACTOSE-FREE
ORIGINAL
SABOR ORIGINAL
Silk
all natural soymilk*
leche de soya totalmente natural
SMOOTH AND DELICIOUS
HALF GALLON
LACTOSE-FREE
VANILLA
VAINILLA
Silk
all natural soymilk*
SMOOTH AND DELICIOUS


OFF!
DEEP WOODS
INSECT REPELLENT VII
LONG LASTING PROTECTION FROM
MOSQUITOES, TICKS, BITING
FLIES, GNATS & CHIGGERS
Repels Mosquitoes That May Carry WEST NILE VIRUS
KEEP OUT OF REACH OF CHILDREN
WARNING: See additional precautions on back panel
ACTIVE INGREDIENT:
DEET 25%
OTHER INGREDIENTS: 75%
6 FL. OZ. (177 mL)
Johnson
A FAMILY COMPANY


Cetaphil
Daily Facial Moisturizer
SPF 15
4 FL OZ (118 mL)
skin effects
Cleansing Effects
Gentle Foaming Cleanser
for Sensitive Skin
6.6 fl.oz. (198 ml)
NEW
Aveeno
ACTIVE NATURALS
Ultra-Calming
DAILY MOISTURIZER
SPF 15
clinically proven to:
visibly reduce redness
soothe irritated or sensitive skin
with naturally calming feverfew
LUMENE
Sensitive Touch


'BRING OUT THE BEST'®
HELLMANN'S
REAL
MAYONNAISE
OMEGA-3

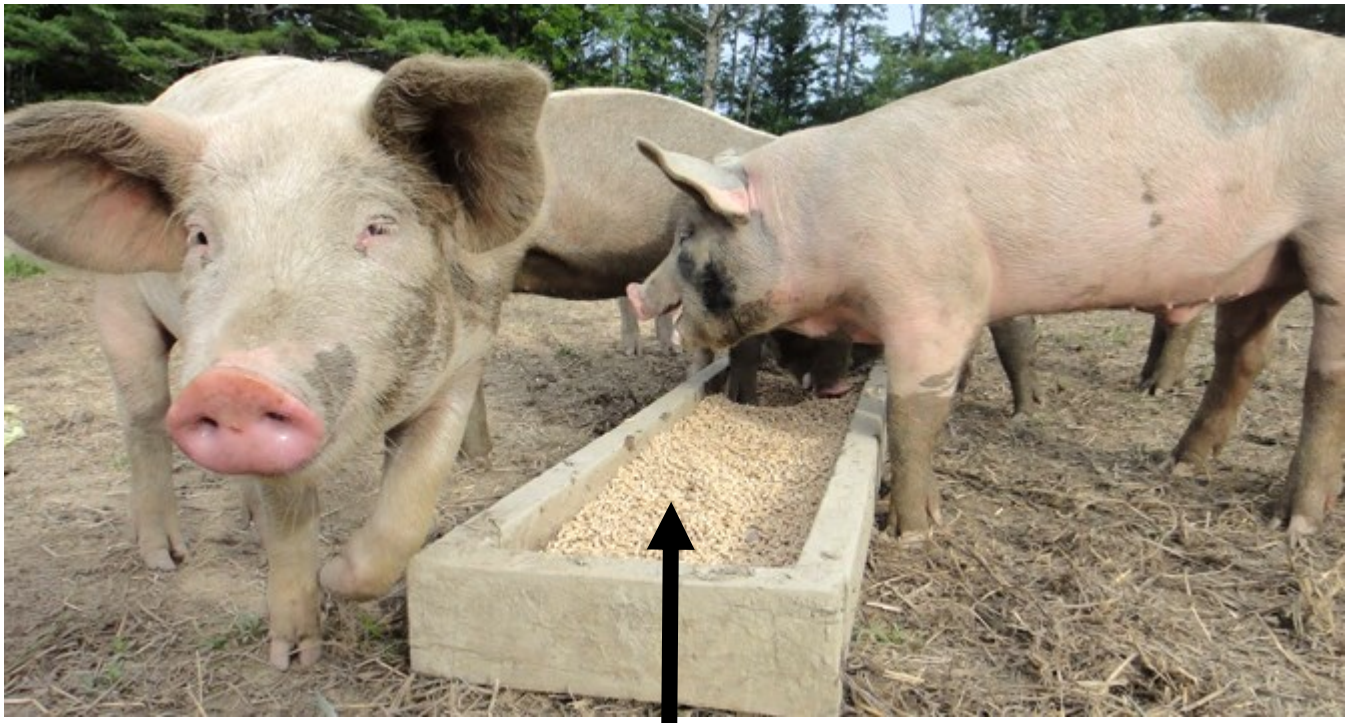

NET WT 12 OZ (3/4 LB) 340g
Nature-fil
Environmentally Friendly
All Natural Premium Fiberfill
Earth Friendly
Made from annually renewable resources
Hypo-allergenic
Washable in proj
guaranteed


ECO FIN
CEDAR TONE
Maximum UV Protection
Does Not Exceed 100 Grams/Liter VOC
Batch # 09-3442
1 GALLON
NO PETROLEUM OILS & MINIMAL VOC SOLVENTS

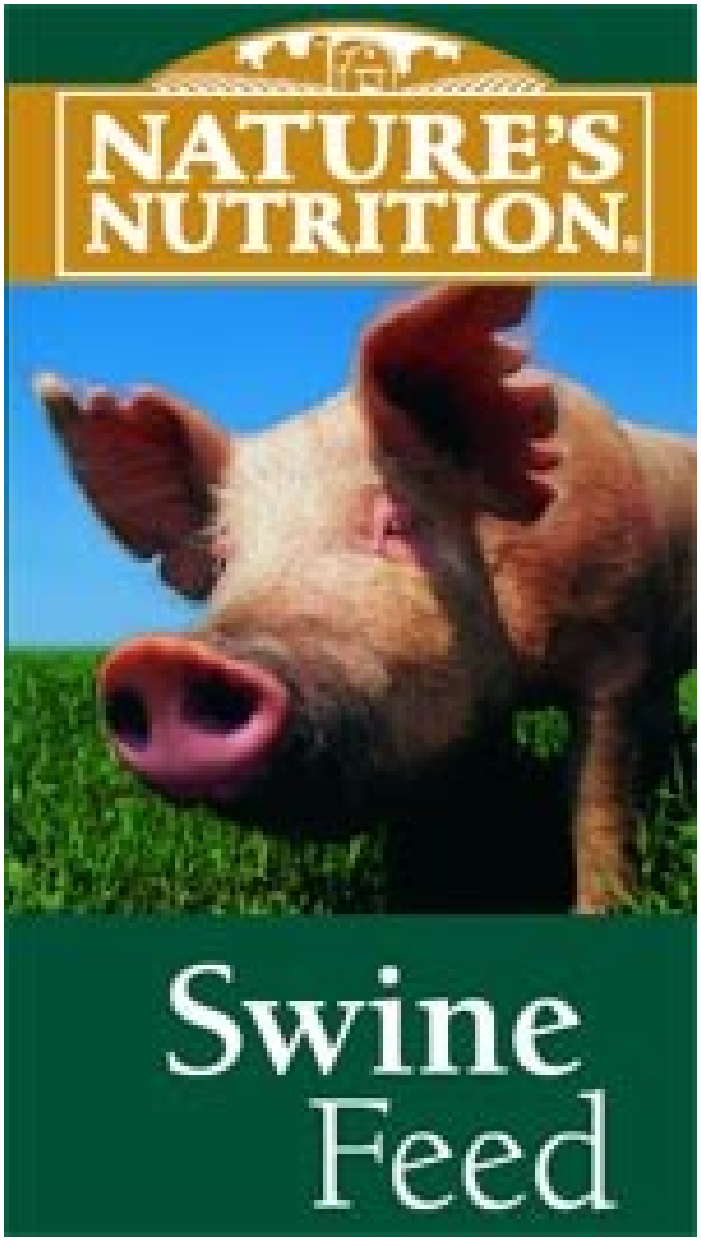

Crayola
Modeling Clay
Stays Soft & Workable


FEED BEE
www.feedbee.com
20 kg
Száraz, Hűvös Helyen Tárolandó
PRODUCT OF CANADA
www.feedbee.com


Purina
NURSE CHOW #100
Milk Replacers
All Milk Protein
SUPERIOR
QUALITY
Purina
NURSE GRO
Milk Replacers
SUPERIOR
QUALITY




Feed Rite
MEDALLION
DAIRY CATTLE FEED
Feed Rite


NATURE'S
NUTRITION.
Swine
Feed


Chinchilla
Alimentation gourmet variété
Chinchilla
Dieta variada gourmet
FORTIFIED
BRAIN & HEART HEALTH
VARIETY & ENRICHMENT
CHINCHILLA
KAYTEE
Gourmet Variety Diet
with DHA, Omega-3 & Probiotics Plus Fun Variety Mix
Fiesta
NET WT 2.5 LB (1.13 kg)


SOY
BIODIESEL®
Another innovation fueled by the soybean checkoff.
THE AMERICAN WAY TO FUEL


RENEWABLE
LUBRICANTS
Bio-Food Grade E.P. Grease
NLGI # 2 (High Temperature)
STABILIZED
"Biobased Lubricants that Perform Like Synthetics"
35 lb. Pail
BATCH NUMBER:
Renewable Lubricants, Inc.
FIRST AID:

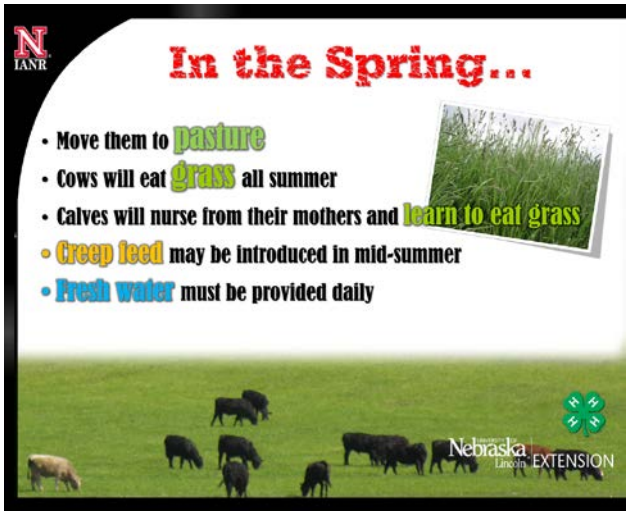
Beef Production Example

Nebraska 4-H Agriculture Festival

Learner Objectives:

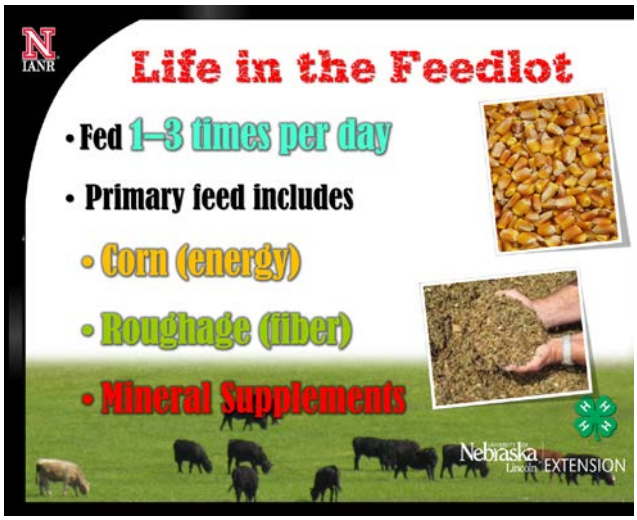
- Youth can summarize the beef production cycle.
- Youth can recognize beef products and by-products.

Slide 13:



In May or early June we are going to move our cows and calves to pasture. We are so lucky in Nebraska that we have good quality pasture grass that our animals can get all of the nutrients they need most of the summer. As long as we provide them with good fresh water every day, they are very happy in the pasture.

The calves will nurse from their mothers and then in mid-summer we will put creep feed out for our calves. Creep feed helps them learn how to eat grain and teaches their belly how to digest grain. Creep feed is a sweet feed that they like to eat.



Slide 16:

We feed them 1 – 3 times per day depending on the routine of the feedlot. The feed they eat is generally made up of corn which is an energy source, roughage which is a fiber to help the rumen work properly and then minerals to make sure they are getting all of the nutrients they need.

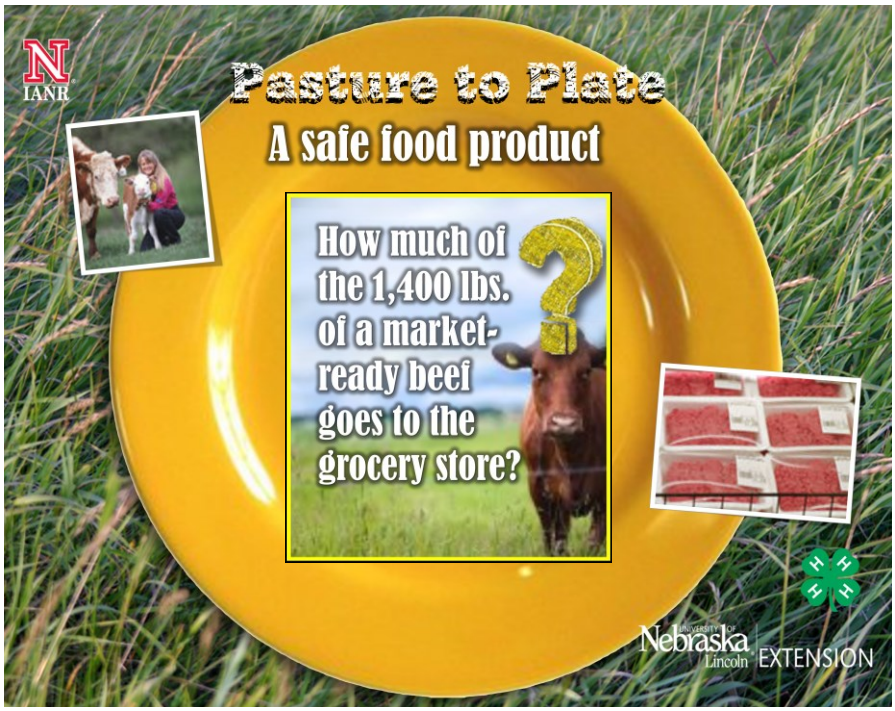

IANR
Beef Cattle
MEAT & BYPRODUCTS
• 640 pounds used for meat products, such as steak, roasts and hamburgers
• 64% used for meat
• 90% and other products
Dairy Cattle
144 baseballs
18 volleyballs
12 basketball
12 baseball gloves
18 soccer balls
20 footballs


IANR
Pasture to Plate
A safe food product
How long does it take for a calf to go from birth to a finished market-ready weight?
University of Nebraska Lincoln EXTENSION


IANR
Pasture to Plate
A safe food product
18-20
months of age
Cow Calendar
Nebraska
Lincoln
EXTENSION


IANR
Pasture to Plate
A safe food product
How much does a market-ready beef animal weigh?
Nebraska
Lincoln
EXTENSION


IANR
Pasture to Plate
A safe food product
1,100 to 1,400
pounds
depending
on breed type
Nebraska
Lincoln
EXTENSION


IANR
Pasture to Plate
A safe food product
How much of the 1,400 lbs. of a market-ready beef goes to the grocery store?
Nebraska
Lincoln
EXTENSION


IANR
Pasture to Plate
A safe food product
64%
About 900 pounds of meat. The remaining portions are also used in consumer goods.
Nebraska Lincoln EXTENSION


IANR
Pasture to Plate
A safe food product
Where does Nebraska rank nationally in commercial red meat production?
Nebraska Lincoln EXTENSION


IANR
Pasture to Plate
A safe food product
We're #1
In 2013,
7,353,100,000 lbs.
of red meat were
produced in Nebraska
Nebraska Lincoln EXTENSION


IANR
From Birth To Market-Ready
heifers
cows.
• A cow is pregnant for about 9 months.
calf,
calving.
7 or 8
months old.
Males are called bulls unless they are castrated making them into steers.
ready. Steers are also kept in a feedlot until they go to market.
Nebraska Lincoln EXTENSION

A Day in the Life…

February and April.
70-80 pounds.

Nebraska Lincoln EXTENSION

Once they are born

- Ear tag
- Branding

Nebraska Lincoln EXTENSION

In the Spring…

pasture
grass

learn to eat grass

- Creep feed
- Fresh water

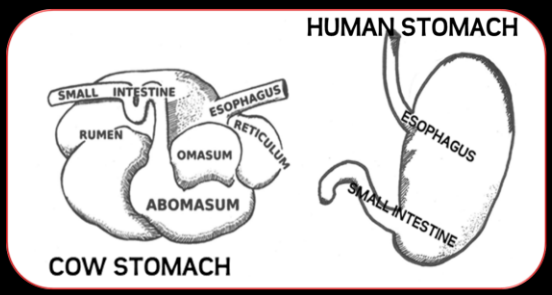
Nebraska Lincoln EXTENSION

Ruminant Anatomy and Physiology

ruminant?

ruminants?

digest their food?



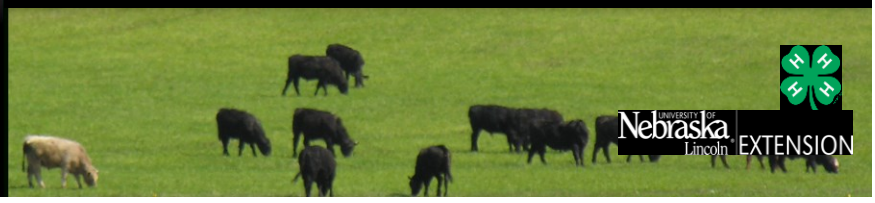
Nebraska Lincoln EXTENSION

In the Fall…

500 – 600 pounds

- Weaned

feedlot



Nebraska Lincoln EXTENSION

Life in the Feedlot

1–3 times per day

- Corn (energy)
- Roughage (fiber)
- Mineral Supplements

Nebraska Lincoln EXTENSION

Life in the Feedlot

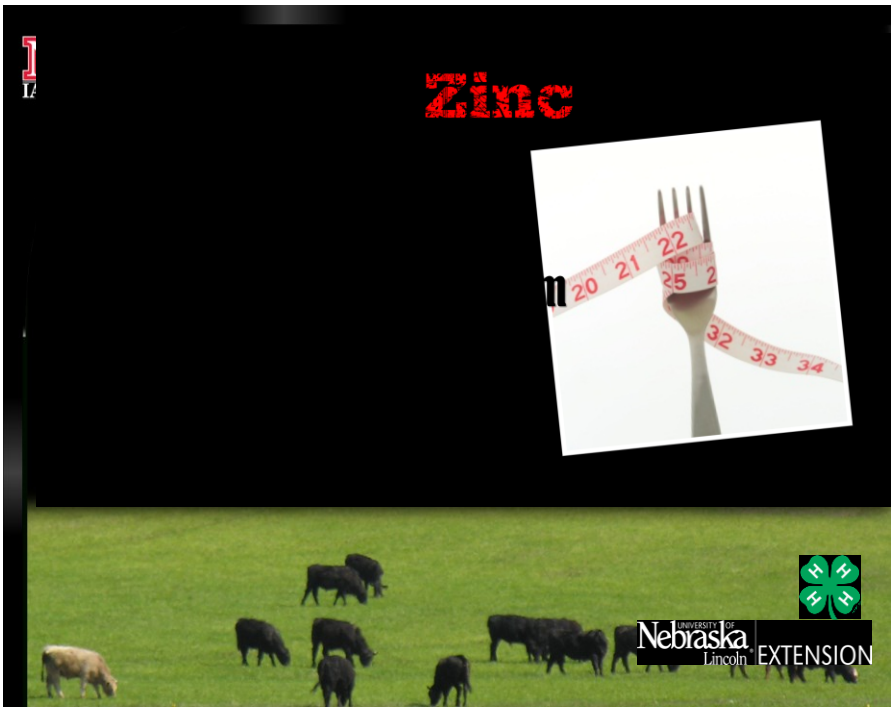
Average 3 lbs. of gain per day

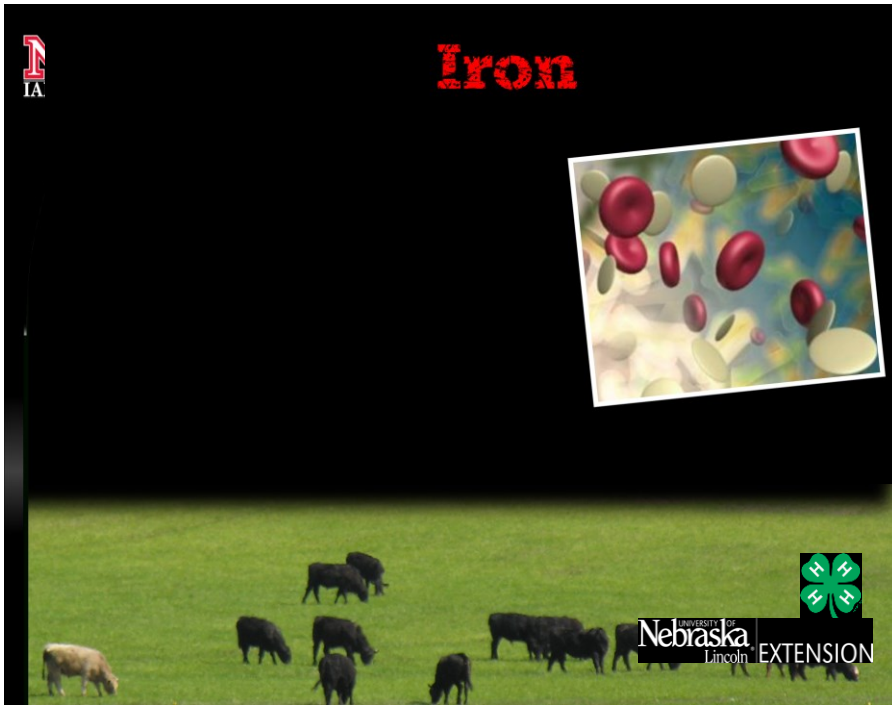
Nebraska Lincoln EXTENSION

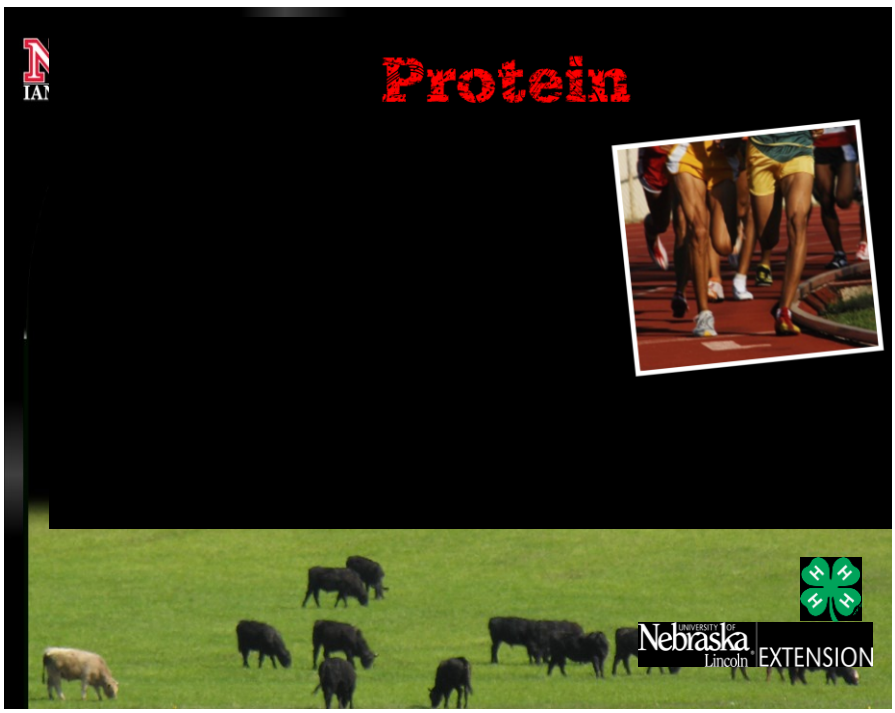
Animal Handling

Nebraska Lincoln EXTENSION


IANR
Beef contains some very important nutrients
• Do you know what key nutrients beef can provide in our diet?
• Let's take a look at each of these nutrients and why they are important.
Nebraska Lincoln EXTENSION

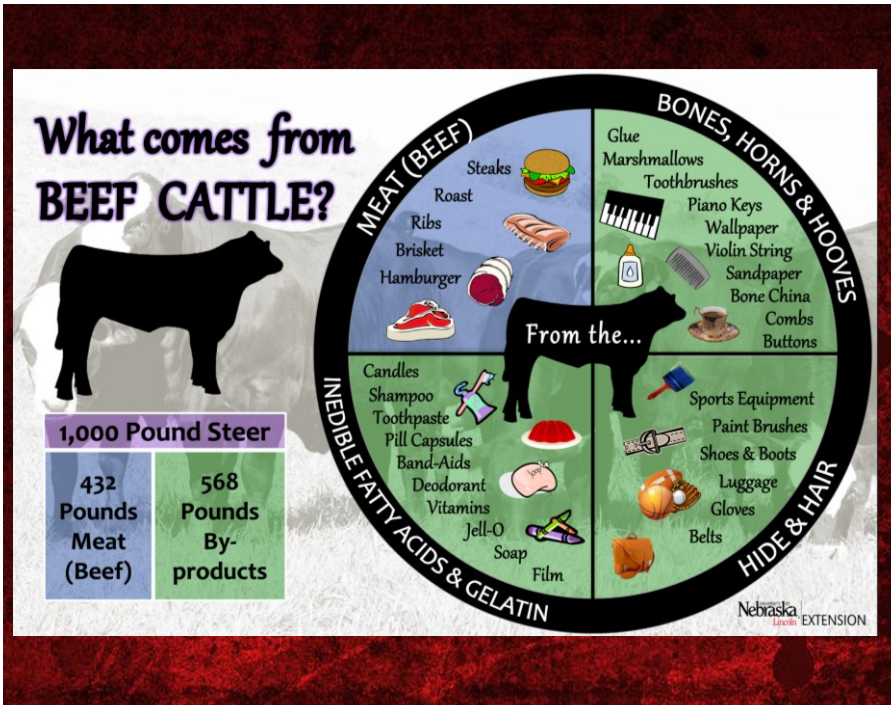

Zinc
Nebraska Lincoln EXTENSION


Iron
Nebraska
Lincoln
EXTENSION


Protein
Nebraska
Lincoln
EXTENSION


You've seen how ZIP
Let's take a look at more nutrients found in beef and how they relate to diet.
Nebraska Lincoln EXTENSION


B-vitamins help release energy in food.
Beef is one of the best sources of B-vitamins in our diet.
Vitamin B_3:
Vitamin B_6:
Vitamin B_{12}:
Nebraska Lincoln EXTENSION


What comes from
BEEF CATTLE?
1,000 Pound Steer
432 Pounds Meat (Beef)
568 Pounds By-products
From the...
MEAT (BEEF)
Steaks
Roast
Ribs
Brisket
Hamburger
BONES, HORNS & HOOVES
Glue
Marshmallows
Toothbrushes
Piano Keys
Wallpaper
Violin String
Sandpaper
Bone China
Combs
Buttons
INEDIBLE FATTY ACIDS & GELATIN
Candles
Shampoo
Toothpaste
Pill Capsules
Band-Aids
Deodorant
Vitamins
Jell-O
Soap
Film
HIDE & HAIR
Sports Equipment
Paint Brushes
Shoes & Boots
Luggage
Gloves
Belts
Nebraska EXTENSION

2015 Nebraska 4-H – Ag Literacy Festival
Teacher Survey

Return By: (Include Date)
Mail To:
(Extension Faculty/Staff)
(Extension Office Address)
or Fax To:
(Fax Number)
or E-mail PDF To:
(Extension Staff E-mail)

Section I: Program Information

1. **Please provide the following information about the Ag Literacy Festival you attended:**

   Date of Festival: _____

   Location of Festival: _____

2. **Please provide the following information about your participation:**

   Name of School: _____

   Teacher Name: _____

   E-Mail Address: _____

   Total # of Students: _____

   Gender: Total # Males: _____ Total # Females: _____

   Total # in each Grade: K:_____ 1st: _____ 2nd: _____ 3rd: _____ 4th: _____ 5th: _____

   Total # in each Ethnicity: Hispanic or Latino:_____ Not Hispanic or Latino: _____

   Total # in each Race:
   American Indian or Alaskan Native: _____
   Asian: _____
   Black or African American: _____
   Native Hawaiian or Other Pacific Islander: _____
   White: _____

3. **How many years have you been bringing students to this Ag Literacy Festival?**

   Total # of years: _____

Section II: Program Satisfaction

4. Please indicate how satisfied you are with the following statements. (Select <u>one</u> response in each row by marking the appropriate box ☒.)

	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
Quality of educational content	☐	☐	☐	☐	☐
Presentation was age-appropriate	☐	☐	☐	☐	☐
Presentation was engaging	☐	☐	☐	☐	☐
Presentation was relevant to classroom content	☐	☐	☐	☐	☐

Please answer the following questions by writing your answer in the space provided or by marking the appropriate box ☒.

5. Which session best complements what you teach in the classroom? Please explain.

6. In your opinion, what was the one thing students were most excited about learning?

7. Given the opportunity, would you participate in the program again? (Mark one box ☒)

☐ Yes
☐ No

8. Please explain why you would or would not participate in the program again.

9. **Based on your observation, please indicate how much you agree or disagree with the following statements.** (Select one response in each row by marking the appropriate box ☒.)

	Strongly Disagree 1	2	Moderately Agree 3	4	Strongly Agree 5
Youth are able to explain the progression of agriculture technology and how it affects corn and soybean production.	☐	☐	☐	☐	☐
Youth are able to identify the importance of technology in agriculture to help farmers feed the world.	☐	☐	☐	☐	☐
Youth are able to determine what products they use in their lives are from corn and soybeans.	☐	☐	☐	☐	☐
Youth are able to explain how corn and soybeans are used for different purposes (human/animal/energy).	☐	☐	☐	☐	☐
Youth are able to recognize the corn and soybean production cycles.	☐	☐	☐	☐	☐
Youth are able to identify the science behind the Plant Life Cycle.	☐	☐	☐	☐	☐
Youth are able to apply math utilizing corn and soybean production statistics.	☐	☐	☐	☐	☐
Youth can summarize the beef production cycle.	☐	☐	☐	☐	☐
Youth can recognize beef products and by-products.	☐	☐	☐	☐	☐
Youth can describe how pig farmers care for their pigs.	☐	☐	☐	☐	☐
Youth can express how pig farmers care for the environment.	☐	☐	☐	☐	☐
Youth can identify dairy products.	☐	☐	☐	☐	☐
Youth can tell others about the milk production cycle and how dairy farmers care for their dairy animals.	☐	☐	☐	☐	☐

Please answer the following questions by writing your answer in the space provided.

10. **As a result of participating in this program, what did your students learn?**

11. **As a result of participating in this program, how do you think your students will apply what they learned to their everyday lives?**

12. **Please make any suggestions and/or comments.**