

ACTIVITY SNAPSHOT

SUPPORTING AREAS

Environment, renewable and nonrenewable resources, science, technology, economics, global trade

PURPOSE

Students will understand the importance of grain storage and how Nebraska corn is traded locally and globally. They'll explore how farmers use science and technology to prepare corn for market and how international trade affects Nebraska's economy.

STATE STANDARDS IT SUPPORTS

SC 5.13.4.c Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

SS 5.3.2 Compare the characteristics of places and regions and draw conclusions on their impact on human decisions.

SS 5.4.3 Explain how supply and demand and international trade affect Nebraska agriculture.

MATERIALS

Activity 1

Video 4: *Grain Storage – Field to Market*

- (1 per student)

Activity 2

- Build a Miniature Grain Bin Model
- Cardboard boxes, plastic wrap, tape, small beads or corn seeds, spoons, or other materials as needed.

Video 4: Grain Storage - Field to Market

Activity Summary

Let's talk about grain storage! Students will watch an educational video detailing the corn harvesting process. As they watch, there will be an interactive worksheet to be filled out during the video. Afterward, students will participate in a hands-on activity that models how grain bins are used to safely store corn and prepare it for market.

Vocabulary Words

Grain Bin – A large container used to store harvested grain.

Moisture Content – The amount of water in the corn, which must be low for safe storage.

Grain Merchandiser – A person who buys and sells grain.

Ethanol – Fuel made from corn.

Key Concepts

- Corn is stored in bins until it's sold to elevators, ethanol plants, or exported.
- Moisture content and test weight are critical to corn quality.
- International trade helps Nebraska farmers earn income and feed the world.

What's the Connection to Agriculture?

Farmers don't just grow corn. They also store, manage, and market it. Grain storage and trade involves decision-making, weather monitoring, moisture tracking, and understanding economics.

This process connects agriculture to science, sustainability, and global trade.

Background Information

After harvest, farmers must carefully manage their grain to maintain quality and value. Corn is stored in large metal containers called **grain bins**, where air and temperature are controlled to prevent spoilage. The corn's **moisture content**, or the amount of water in each kernel, must be reduced to about 15% for safe long-term storage.

Once the grain is dry and stable, farmers monitor markets and decide when and where to sell their corn, often to local **grain elevators, ethanol plants, or export terminals** that ship it overseas. This decision-making process connects science (weather and moisture management), technology (testing and drying equipment), and economics (global markets and trade).

This lesson helps students understand that agriculture extends far beyond the field. It involves engineering, business, and global trade that fuel Nebraska's economy and feed people worldwide.

Interest Approach

Ask Students:

1. What do you think happens to corn after it's picked?
2. Why might farmers want to sell their corn?
3. What happens if corn gets too wet or too hot?
4. How does Nebraska corn reach people in other countries?

Activity Procedure

Activity 1 – *Grain Storage - Field to Market*

1. Pass out a worksheet to each student (included below), and have students answer the first two questions.
2. Play Video 4: *Grain Storage - Field to Market* for the class.
3. Students can fill in the answers as they watch the video.

Activity 2 – Build a Miniature Grain Bin Model

1. Cut the cardboard box to resemble a grain bin, leaving an opening at the top and bottom.
2. Line the inside with plastic wrap to represent the bin's metal interior.
3. Measure and pour in the "grain."
4. Simulate filling and emptying the bin by pouring the grain in and out.
5. Use the fan (if available) to demonstrate airflow and drying.
6. Discuss how airflow, moisture, and storage decisions affect corn quality and farmer profits.

Concept Elaboration and Evaluation

After conducting these activities review and summarize the following key concepts:

- Farmers use grain bins to keep harvested corn dry and safe from spoilage.
- Moisture content must be monitored carefully before and during storage.
- International trade allows Nebraska farmers to sell corn worldwide, earning income and feeding others.

Extension Activities

Bartering Through the Seasons

Students investigate the seasons, explore the process of wool production, and discover how trade and barter have historically allowed people to satisfy their needs and wants.

<https://agclassroom.org/matrix/lessons/230/>

How Weather Impacts Farms

Students explore different types of weather and discover how weather conditions can impact farms.

<https://agclassroom.org/matrix/lessons/786/>

Invite an Educator into your Classroom to learn more about commodity markets and trade.

Competitive Farming

Subject: Social Studies

Nebraska State Standard Connection:

SS 5.2.6.a *Describe how international trade promotes specialization and division of labor and increases the productivity of labor, output, and consumption.*

Trade increases competition and lowers prices, but who sets those prices? Predicting the price of the futures market can be both complicated and risky. In this lesson, students will learn that farmers seek to earn a profit when they sell their crop, that markets can influence trade relationships with other countries, and the necessity of keeping positive relationships with other countries who purchase Nebraska commodities. Students will gain an understanding of the futures market and how Nebraska soybean farmers trade and export soybeans in an interactive guessing game using critical thinking and M&Ms.

<https://nefbfoundation.org/classroomvisits/>

Soybeans Shape the World

Subject: Social Studies

Nebraska State Standard Connection:

SS 5.2.6.b *Explain how trade impacts relationships between countries.*

How many miles does food travel to make it to the dinner table? In this lesson, students will explore agricultural commodities from all corners of the globe and trace them to their dinner plate. Students will explore exports in a hands-on trading activity to connect Nebraska soybeans to different regions in the world.

<https://nefbfoundation.org/classroomvisits/>

Follow-Along Worksheet: Grain Storage - Field to Market

Name: _____

Date: _____

Video Title: *Grain Storage - Field to Market*

Before You Watch: Think About It!

1. What do you think a farmer does with corn after it's picked?
2. Why might farmers want to sell their corn?

Part 1: Meet the Farmer

Circle the right answers:

1. Mitch Oswald is a:
- Teacher - Farmer - Truck Driver
2. What Nebraska town is his farm near?
- Omaha - Lincoln - Aurora
3. What crop are we learning about today?
- Corn - Wheat - Soybeans

Part 2: What's a Grain Bin?

Fill in the blanks:

1. Corn must be dried to about _____ % moisture to keep it from spoiling.
2. One of Mitch's grain bins holds about _____ bushels of corn!
3. The _____ is a 20 ft hole in the ground that corn is dropped into.

Part 3: Testing & Drying Corn

Match the words to their meanings:

<u>Word</u>	<u>Description</u>
Grain Tester _____	A. Heats corn to remove moisture
Grain Dryer _____	B. Measures moisture and test weight
Elevator Leg _____	C. Lifts corn up into the grain bins

Part 4: When to Sell?

Check all the reasons farmers store grain:

- ☐ To mix low quality corn with high quality corn
- ☐ To allow to harvest season to continue
- ☐ To grow new types of corn in the bin
- ☐ To wait for higher market prices

Part 5: Where Does the Corn Go?

Write the steps in order (1-5):

- _____ Corn is taken from the field by the combine
- _____ Corn is lifted by the elevator leg and placed into bins
- _____ Corn is tested for moisture level
- _____ Corn is dried
- _____ Corn is then sold or shipped

Part 6: Nebraska Corn Around the World

True or False:

- 1. Nebraska corn is only used in Nebraska? - True - False
- 2. Ethanol made from corn is used as fuel. - True - False
- 3. Nebraska corn is sent to other states and countries. - True - False

Reflect: Tell the Story of a Kernel!

Write a short story (3–5 sentences) from the point of view of a corn kernel during the storage process.

Start with: "I grew under the Nebraska sun and was picked by a big combine..."

Answer Key: Grain Storage and Trade

Before You Watch: Think About It!

1. What do you think a farmer does with corn after it's picked?

Answers will vary: *Sell it, store it, make food with it.*

2. Why might farmers want to sell their corn?

Answers will vary: *to get better prices, avoid elevator lines, let it dry, mix grain qualities.*

Part 1: Meet the Farmer

Circle the right answers:

1. Mitch Oswald is a:

- Teacher - Farmer - Truck Driver

2. What Nebraska town is his farm near?

- Omaha - Lincoln - Aurora

3. What crop are we learning about today?

- Corn - Wheat - Soybeans

Part 2: What's a Grain Bin?

Fill in the blanks:

1. Corn must be dried to about **15** % moisture to keep it from spoiling.

2. One of Mitch's grain bins holds about **40,000** bushels of corn!

3. The ***pit*** is a 20 ft hole in the ground that corn is dropped into.

Part 3: Testing & Drying Corn

Match the words to their meanings:

Word

Description

Grain Tester **B**

A. Heats corn to remove moisture

Grain Dryer **A**

B. Measures moisture and test weight

Elevator Leg **C**

C. Lifts corn up into the grain bins

Part 4: When to Sell?

Check all the reasons farmers store grain:

- ☒ To mix low quality corn with high quality corn
- ☒ To allow to harvest season to continue
- ☐ To grow new types of corn in the bin
- ☒ To wait for higher market prices

Part 5: Where Does the Corn Go?

Write the steps in order (1-5):

- 1 Corn is taken from the field by the combine
- 3 Corn is lifted by the elevator leg and placed into bins
- 2 Corn is tested for moisture level
- 4 Corn is dried
- 5 Corn is then sold or shipped

Part 6: Nebraska Corn Around the World

True or False:

1. Nebraska corn is only used in Nebraska? - True - False
2. Ethanol made from corn is used as fuel. - True - False
3. Nebraska corn is sent to other states and countries. - True - False

Reflect: Tell the Story of a Kernel!

Write a short story (3–5 sentences) from the point of view of a corn kernel during the storage process.

(Open-ended – look for creativity, facts from the video, and sequencing like growing - harvested - stored)

Example: *"I grew under the Nebraska sun and was picked by a big combine. After harvest, I was tested for moisture and dried until I was just right. I was placed into a big storage bin. Later, I was loaded into a semi and sent to an ethanol plant. One day, I'll be part of someone's fuel!"*