Machines on the Farm

*Lesson Plan for Grade K, Math*

*Prepared by Mississippi State University, School of Human Science*

*for Mississippi Farm Bureau Federation - AITC*

# OVERVIEW & PURPOSE

In this lesson students will gain an understanding about different machines and what they are used for on farms.

# EDUCATIONAL STANDARDS

**Mississippi College-and-Career Readiness Standards:**

K.CC.1 Count to 100 by ones and by tens.

K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

K.CC.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects.)

**NALOs:**

T1.K-2.a Describe how farmer use land to grow crops and support livestock

T5.K-2.a Discuss what a farmer does

T4. K-2.b Recognize and identify examples of simple tools and machines used in agricultural settings

# OBJECTIVES

* Students will identify different machines used on farms and what they do.

# MATERIALS NEEDED

* *Circle Time: Machines on the Farm*
  + [*Vocabulary Development Photo Cards*](https://drive.google.com/file/d/1RcPxcsF01m1etUbFt8Tvq93j479jdaKv/view?usp=drive_link)
  + [*Machines on the Farm song*](https://drive.google.com/file/d/1kHJ09XT30bklcnSONnJhjqxfHxMSBdpo/view?usp=drive_link)
* *Literacy: Alphabet Plowing* 
  + [*Alphabet Plowing cards*](https://drive.google.com/file/d/1p-7aXGsBlmcIKFrlf7U_UYW0yk7tSHt0/view?usp=drive_link)
  + *Shallow tray filled with soil*
  + *Pencil*
  + *Small toy tractors*
* *Math: Tractor Squeeze*
  + [*Tractor Squeeze Props*](https://drive.google.com/file/d/1pe1c8nqfk5Xy0q1IEkHEPgEyMXCmAlKU/view?usp=drive_link)
  + *Craft Sticks*
  + *Number line, 1-10 ir 1-20*

# BACKGROUND INFORMATION

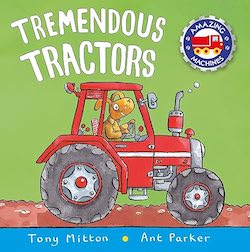
In an effort to simplify the idea of where food comes from, many early learners are implicitly taught that most farms look like the farms of the past: a single family living and working on a farm to provide for their day-to-day needs. In the past, the entire family would work on the farm and there was always work to be done. Typically, these farms would grow many different fruits and vegetables, with a big barn that housed a variety of livestock animals: a small brood of chickens, a horse, several cows and pigs, and a small herd of sheep. The family's food came from their own farm. Although some farms are still like that, today we get most of our food from much larger farms—still family owned—that specialize in growing one type of food. There are egg farms, dairy farms, almond farms, and apple farms. Modern farms require specialized knowledge, skills, and machinery in order to survive the global marketplace.

A **machine** is a device used to make work easier. People appreciate machines because they save time and human energy. Machines are a basic part of our heritage. The human's innate genius for invention and tinkering has resulted in the creation of many machines. Thus, machines have turned people's dreams into reality. Almost everything people do depends, in some way, on machines—simple or complex. The development of agricultural implements has not only made work easier for the farmer, but advanced technology continues to make the machines more efficient.

# LEARNING PROCEDURES

Engage: Read *Hey, Hey, Hay* by Christy Mihaly.

1. Ask the students, "What machines did the girl and her mom use to make hay bales?" *(tractor, mower, tedder, hay rake, baler, bale grabber)*
2. Explain to the students that farm machines make work easier for farmers. Tell them that they will be learning about different machines used on farms and what they do.



**Circle Time: Machines on the Farm**

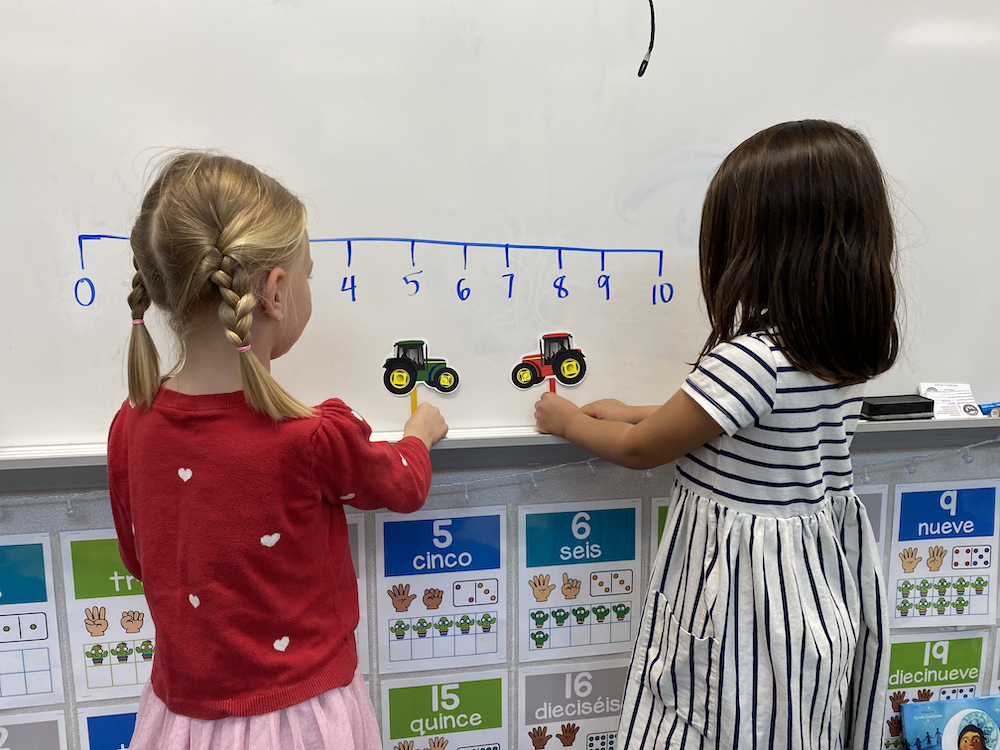
1. Read the book, *Tremendous Tractors* by Tony Mitton and Ant Parker.
2. After reading, review the [Vocabulary Development Photo Cards.](https://drive.google.com/file/d/1RcPxcsF01m1etUbFt8Tvq93j479jdaKv/view?usp=drive_link) 
   1. Show the cards to the children and say the name of each photo on the card. Encourage the children to repeat the vocabulary words after you.
   2. Ask the children to identify the object or action on the card and describe what it is or does.
   3. Possible prompts:
      * **Tire:** The round rubber part on the tractor that helps it move and grip the ground. What other vehicles have tires and how are they different from tractor tires?
      * **Plow:** A farm tool that is pulled by a tractor and used to turn over soil and create furrows for planting seeds. How does this make a farmer's job easier?
      * **Furrow:** A long narrow trench that is made in the ground by a plow, which helps farmers plant seeds in neat rows. What tool did farmers use to make furrows before the plow was invented? Why do they use a plow now?
      * **Hopper:** A part of the tractor that holds and distributes seeds or fertilizer while the farmer is planting crops. Have you ever planted a seed in the ground? What was it like?
      * **Bale:** A large bundle of hay or straw that has been compressed and tied together. Bales are often used as animal feed or bedding. Have you seen a bale of hay? What does it look/smell/feel like?
      * **Thresh:** The process of separating grains, like wheat or rice, from the stalks and husks that surround them, which is done using a machine called a thresher. How does your family eat wheat or rice?
3. Teach the students the song, [Machines on the Farm](https://drive.google.com/file/d/1kHJ09XT30bklcnSONnJhjqxfHxMSBdpo/view?usp=drive_link). Tips for teaching preschoolers a new song:
   1. **Use Visuals:** Use pictures or props to help children understand the lyrics and the tune of the song. Use hand gestures or actions to make the song more engaging.
   2. **Break it Down:** Teach the song in small parts, repeating each part until the children are familiar with it. Sing the song slowly and clearly so that the children can follow along.
   3. **Repeat, Repeat, Repeat:** Encourage the children to sing the song repeatedly until they have memorized the lyrics and the tune. Repetition is key in helping children learn and remember new songs.

**Literacy: Alphabet Plowing**

1. Explain to the students that they will be practicing making letters by choosing an [Alphabet Plowing Card](https://drive.google.com/file/d/1p-7aXGsBlmcIKFrlf7U_UYW0yk7tSHt0/view?usp=drive_link) and then using a toy tractor to create the letter in the soil.
2. Demonstrate how to use the tractor to make the letter by drawing the letter in the soil with a pencil, and then driving the tractor along the lines to make the letter shape.
3. Have each child pick an [*Alphabet Plowing Card*](https://drive.google.com/file/d/1p-7aXGsBlmcIKFrlf7U_UYW0yk7tSHt0/view?usp=drive_link) from a stack, and show how to write the letter in the soil with a pencil.
4. Encourage the children to use the toy tractors to drive along the lines of the letter and make the shape in the soil.

**Math: Tractor Squeeze**

Teacher Note:Prior to the lesson, print, cut, and laminate the [Tractor Squeeze Props](https://drive.google.com/file/d/1pe1c8nqfk5Xy0q1IEkHEPgEyMXCmAlKU/view?usp=drive_link) and tape a craft stick to the back of each one. Make one set for each group. Determine the most suitable number line for learners to use ([1-10](https://cdn.agclassroom.org/media/uploads/LP866/number_line_1-10.pdf) or [1-20](https://cdn.agclassroom.org/media/uploads/LP866/number_line_1-20.pdf)) and print, cut, and laminate one for each group..

1. The goal of the game is to correctly guess the mystery number that has been selected by another player using a number line. Ask for a volunteer to partner with you to demonstrate the game to the class.
2. To begin the game, one player should select a mystery number from the number line and write it down without revealing it to the player.
3. The other player will attempt to guess the mystery number. After each guess, the player who selected the mystery number should indicate whether the guess is too high, too low, or correct.
4. The number line and tractor props will help the players make more accurate guesses. A tractor prop will be placed at the end of the number line, facing the middle. If the number guessed is too low, the green tractor will advance to that number, narrowing down the possible numbers. If the number guessed is too high, the red tractor will advance to that number. Play continues until the guessing player guesses correctly.

Additional Learning Procedures

To help students review and elaborate more about farm machinery, try using the [“Think Pair Share”](https://drive.google.com/file/d/1fBj1iBQ_McNewCGWVQ-35UBEEd5GpiGZ/view?usp=drive_link) method to allow students to think deeper and make new connections.

Additional learning procedures to consider:

* Read the book [A Year on the Farm with Casey & Friends](https://agclassroom.org/matrix/resource/843/) to learn about how machines make farm work easier and more efficient.



*For more information and additional lessons visit*

*https://msfb.org/ag-in-the-classroom/lesson-plans/.*