

# Agriculture Counts

**Grade Level: K-1**

**Approximate Length of Activity: One class period**

## **Objective**

### **Teacher**

1. Describe to students the method of counting using agriculture.
2. Provide an understanding of the census.

### **Students**

1. Read a story about our nation's first survey of agriculture.
2. Discuss reasons for counting things.
3. Gain practice by sorting and counting a variety of objects related to agriculture.

**Michigan Content Standards: (Math) N.ME.00.01; N.ME.00.05; N.ME.01.01;**

## **Vocabulary**

- **Agriculture**
- **Census**
- **Livestock**
- **Crop**
- **Fertilizer**
- **Expenses**
- **Counting**
- **Token**
- **Acre**

## Background

Do you remember when you first learned to count? For most people, counting is one of the first things their parents teach them. So if you're like most people you've been counting things almost as long as you've been talking.

Why do we count things? What kinds of things do we count? In ancient times people used tokens made from clay to keep count of things. If they wanted to remember how many sheep they had, they would gather as many of the tokens as they had sheep and place them in a safe place. Over time people began to keep count by making marks on the walls of caves to designate numbers. Some people think this was the first writing.

Why would ancient people need to remember how many sheep they had? They might need to keep track of them so they would know if any had wandered off. In that case, they would need to go look for the one that was missing.

What are some of the things that you count? Maybe your mom says you can have three cookies. Or maybe you know you have 25 baseball cards and want to make sure your little brother didn't take any. Or maybe you know you will need 75 cents to buy a can of pop, and you need to know if you have enough money before you go to the store.

Counting is a very important part of all of our lives. The people who grow our food have to count very closely and keep very good records. They have to know how many acres to plant. They need to know how much seed and fertilizer they will need. And they need to know how many bushels of wheat or soybeans or corn their fields produced during the year. They keep careful records so they can make sure they are earning enough money to pay their expenses. Those who raise animals need to know how many offspring their animals produce so they will know how much food to buy and how many they can sell. They need to know how much money they can expect to make, so they can plan for the coming year. Counting is a very important part of the farmer's job.

Our government needs to keep a good count of crops and farm animals so they will know what kind of help the farmers need to make sure we have enough food to eat. This type of counting is called a census. The U.S. Department of Agriculture's National Agricultural Statistics Service is the government agency responsible for keeping count.

## Materials Needed

- Copies of "Agriculture Counts" worksheets A through E
- Large bag of animal crackers
- Snack mix (pretzels, rice cereal, corn cereal, sunflower seeds, raisins)
- 8-10 paper plates

## Activity Outline

1. Ask students why they count things? What kinds of things do they count? Write answers on the chalkboard.
2. Share background material, and read the story about Arthur Young and the President on Worksheet A.
3. Tell the students they will be conducting their own agricultural census. Divide them into groups of four or five. Provide each group with a plate of animal crackers and a copy of the chart on Student Worksheet B.
4. Show students how to use tally marks to keep count. Explain that this is similar to the way ancient people kept count by drawing pictures on the walls of caves.

5. Have students draw pictures of the different animal crackers in separate columns on their worksheets. Then have students sort the animal crackers and use tally marks in the appropriate columns to count them.
6. Have students translate their tally marks into numbers and ask one person from each group to make a “livestock report.”
7. Draw a classroom chart on the chalkboard and record the data as the groups report it.
8. Repeat the process with the snack mix. Explain to students that the different ingredients in the mix represent different crops. Show students what each ingredient represents, and have students write the names of the different crops at the top of the columns on the chart on Student Worksheet C. Have students sort, count, record and report, as in steps five through seven. (Pretzels=wheat, rice cereal=rice, corn cereal=corn, sunflower=sunflower, raisins=grapes)
9. Plan the snack bags so that there is more of one type than another.
10. Have students place identical snack ingredients into piles of 2’s, 5’s, and 10’s up to 30.
11. Provide extra snack mix and animal crackers for students to eat.
12. Have students complete worksheets D and E.

### Discussion Questions

1. Why do we count things?
2. What kinds of things do you count?
3. What types of things do people in agriculture count?
4. Why is it important for farmers to count things?

### Related Activities

1. Provide students with other assortments to sort and count—mixed seeds, mixed beans, mixed grains, variety candy mixes, crayons, bags of plastic farm animals, etc.
2. On a map of the U.S., have students locate the area surveyed in the story of Arthur Young and George Washington.
3. Have students make a mural like ancient cave drawings showing their animal cracker count. Use the classroom chart you made, and assign one animal to each of the groups. Students should make simple drawings to represent the animals they counted. Use brown paper and tempera paint in earth tones to make the mural look more like a cave drawing.
4. The lesson “A Hundred Bales of Hay” located in the math section of this curriculum book.
5. The lesson “Next Year’s Seeds” located in the math section of this curriculum book.
6. The lesson “Apple Math” located in the math section of this curriculum book.

### Book Resources

1. “One Grain of Rice: A Mathematical Folk Tale” by Demi
2. “Anno’s Counting Book” by Anno Mitsumasa
3. “Anno’s Mysterious Multiplying Jar” by Anno Mitsumasa

*Acknowledgment: Adapted from “Agriculture Counts” provided by the U.S. Department of Agriculture, National Agricultural Statistics Service*

# Arthur Young and the President

## Worksheet A

In January of 1791, President George Washington received a letter from an Englishman named Arthur Young. Arthur Young had many questions about America.

“How much does it cost to buy land in America?” Arthur wrote.

“What kinds of crops grow there? How much does the land produce?”

“What kinds of animals do you raise on your farms? When you sell them, how much do you get paid?”

President Washington didn't know the answers to all of these questions, but he wanted to help. He thought as president of the new country he needed to know the answers to those questions.

But how could he find out what he needed to know?

He thought and thought and finally got an idea. He decided to send letters to all the farmers in the land and ask them the questions Arthur Young had asked him. This was our country's first agricultural survey.

At that time nine of every ten of the citizens of our country were farmers. Most lived and farmed in what is today Pennsylvania, West Virginia, Maryland, Virginia, and the District of Columbia.

Washington sent the letters out and waited. The mail was much slower in 1791 than it is today. There were no airplanes or even trucks to deliver the mail across the country. There were barely roads. And certainly there were no telephones, e-mail or fax machines.

Finally, after several months had passed, President Washington started getting letters back from the farmers. When he got all the information back, he put it together.

Between September 24 and November 18, 1791, President Washington sent three letters to Arthur Young. These were our country's first crop reports.

# My Census of Agriculture

## Livestock Worksheet B

Picture of Animal	Count	Total

# My Census of Agriculture

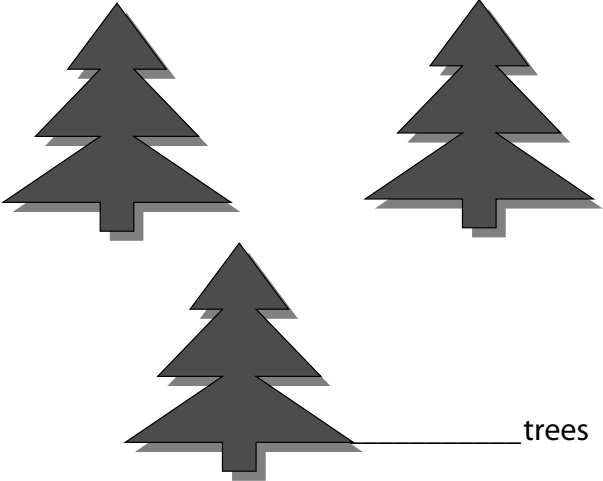
## Crops Worksheet C

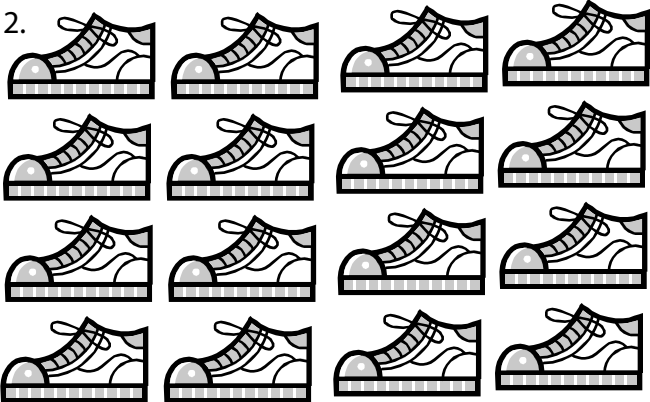
Name of Crop	Count	Total

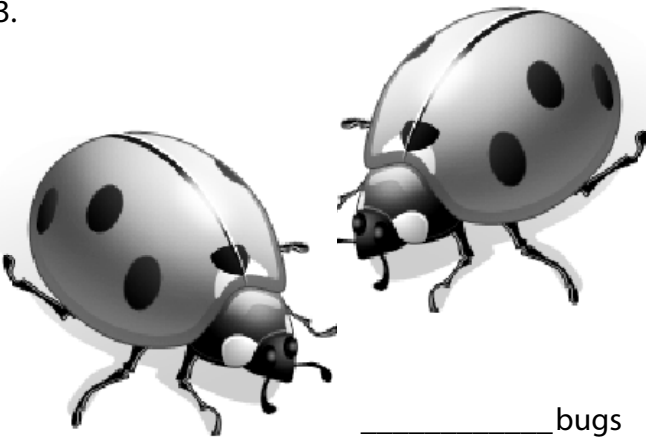
# Agriculture Counts

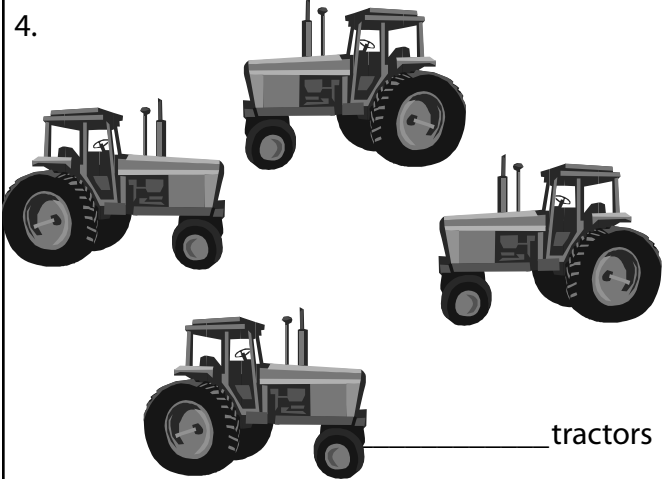
## Worksheet D

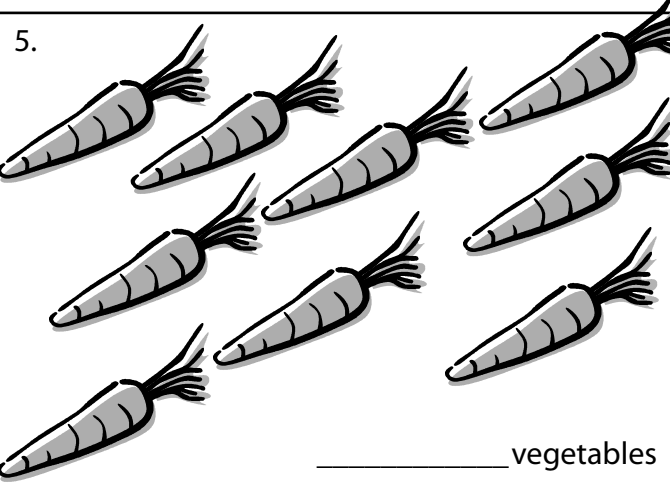
Directions: Count and write the number.

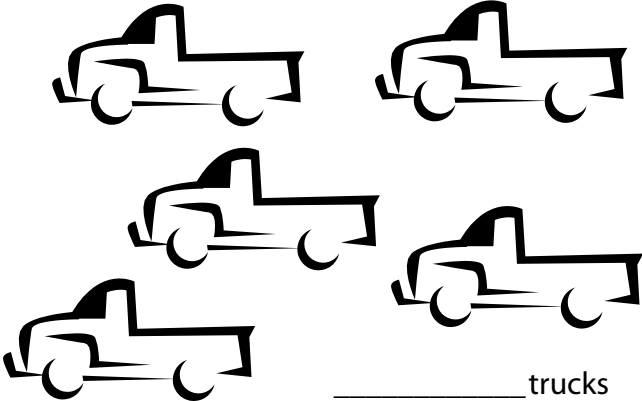
1.  trees \_\_\_\_\_

2.  shoes \_\_\_\_\_

3.  bugs \_\_\_\_\_

4.  tractors \_\_\_\_\_

5.  vegetables \_\_\_\_\_

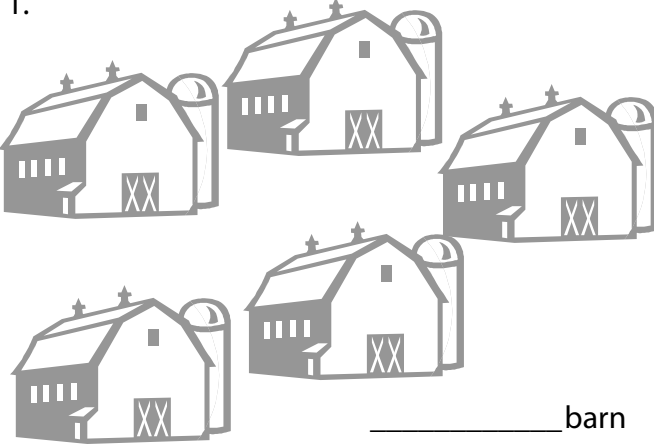
6.  trucks \_\_\_\_\_

# Agriculture Counts

## Worksheet E

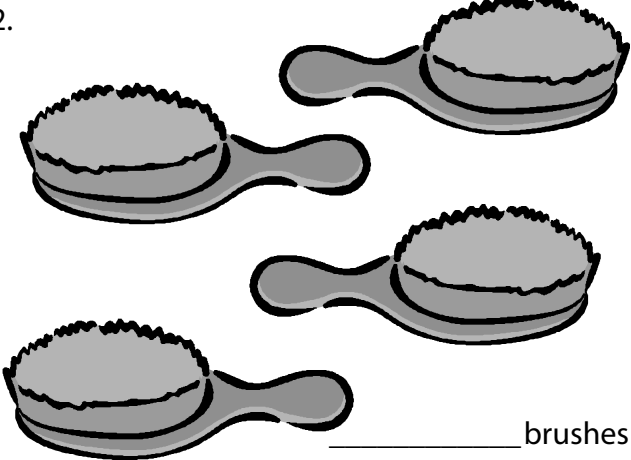
Directions: Count and write the number.

1.



\_\_\_\_\_ barn

2.



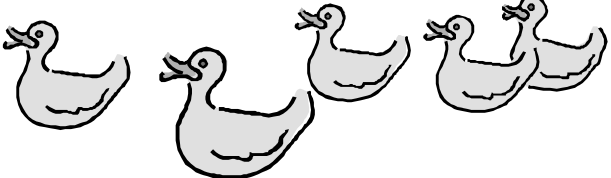
\_\_\_\_\_ brushes

3.



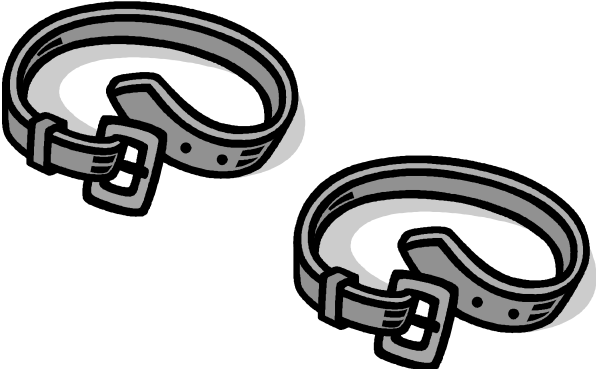
\_\_\_\_\_ pennies

4.




\_\_\_\_\_ ducks

5.



\_\_\_\_\_ belts

6.



\_\_\_\_\_ ice cream cones