



## Ag Soccer – First Grade

### Purpose

To enhance student appreciation for North Carolina farmers and the important role farmers play in their lives.

### Subject Area

Math

### Common Core/Essential Standards

#### Math

- **CCSS.Math 1.MD.4** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
- **CCSS. Math 1.OA.A.1** Represent and solve problems involving addition. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

### Agricultural Literacy Outcomes

#### Culture Society, Economy and Geography

- Identify plants and animals grown or raised locally that are used for food, clothing, shelter, and landscapes

### Essential Questions

1. How can we use objects, drawings, and equations to solve word problems using addition and subtraction within 20?
2. What information can we gather from a graph?
3. What kinds of plants and animals are grown in North Carolina?
4. What are some of the products made from animals raised and crops grown in North Carolina?

### Vocabulary

**Commodities:**all the different plants and animals raised by farmers.

**Receipts:**monies brought into North Carolina from the sales of various farm commodities.

**Rank:**the order of importance.

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 **NC Farm Bureau Ag in the Classroom**

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### **Student Motivator**

Students will be motivated to learn about the types of commodities produced and sold in North Carolina after playing the game [\*Farmer's Market Challenge\*](#). This game helps build math skills by asking students to solve word problems. Each word problem also has a fact about an agricultural product grown in the United States. After playing several rounds of the game discuss the types of agricultural products grown in North Carolina.

### **Background Knowledge**

Broilers are currently the number one commodity in North Carolina. They are the chickens from which the meat comes that becomes fried chicken, barbecued chicken, grilled chicken breast, etc. North Carolina is a major producer of broilers.

Hogs provide us with many food items people enjoy eating – bacon, pork chops, ribs, ham, skins, etc. Mankind is also fortunate that many of the hog parts are very closely matched to those of humans. Therefore, hogs are used in research and transplants. For example, hog skin is sometimes used on burn victims; liver and heart valve transplants are sometimes from hogs; and, insulin was originally created from hogs.

For diversity, selection and quality, the ornamental plant industry in North Carolina is second to none. Over 2,000 certified and registered nurseries are spread throughout all 100 North Carolina counties. Growing conditions that range from a sub-tropical zone 8 along the southeastern coast, to a sub-alpine zone 5 (or colder) at high elevations in the western mountains allow North Carolina nurseries to produce virtually every ornamental plant used in the Eastern United States. Whether it be greenhouse, container, bare-root, or balled and burlapped, North Carolina is able to fill plant needs. North Carolina ranks 3rd nationally, (behind California and Florida) with 1996 sales of 889 million dollars. Nursery and Greenhouse crops are the 4th leading source of farm income in the state. Over 2,000 varieties of woody ornamentals are grown in North Carolina. North Carolina produces over 12% of the real Christmas trees in the United States. North Carolina has over 1,600 Christmas Tree growers. The North Carolina Christmas Tree industry is ranked second in the nation, behind Oregon in the number of trees harvested; and first in the nation in terms of dollars made per tree. Ninety-six percent (96%) of the Christmas Trees produced in North Carolina are Fraser fir. Ashe, Avery, Alleghany, Watauga, and Jackson counties produce 88% of North Carolina's Christmas trees. It takes as long as 12 years to grow a tree to an average retail height of 6-7 ft. The average 6-7 foot Fraser fir Christmas tree has been visited by the grower more than 100 times during it's life.

Tobacco has always been an important part of North Carolina's economy and a vital crop to our producers. Many people raised in this state can find a heritage relating to some area of the tobacco industry. The golden leaf is a bedrock to North Carolina. The Tarheel state continues to rank number one in the production of tobacco with an approximate annual farm income of 1 billion dollars. North Carolina's tobacco economic impact is \$7.7 billion.

North Carolina is the number one turkey producing state. In 1998, our state raised 50 million turkeys!

Soybeans are processed into oil and high protein meal used in enhancing feed rations for farm animals and pet foods such as dog, cat and fish foods. Soybeans are also roasted and eaten as a snack, used in salad dressing, crayons, ink and diesel fuel.

Corn is grown by North Carolina farmers for two basic reasons. One is for human consumption – corn on the cob or off the cob, cornbread, taco shells, corn chips and many other corn products. A second use is feed for animals – hogs, chickens, turkeys, cows, etc. This corn is after the corn plant has dried in the field and the kernels are hardened. After the corn is harvested it is ground to make it easier for the animals to consume. Some corn raised for animals is made into silage. This corn is harvested when the corn plant is fully developed but is still green. The farmer uses a machine to cut the whole corn plant and chop it into small pieces – including the cobs of corn – which is then stored and later fed to the animals. Silage is mainly fed to cattle and calves.

North Carolina cotton farmers produce approximately 1 million bales of cotton each year. A bale weighs a little less than 500 pounds.

Some North Carolina farmers raise eggs for sale to the public and others raise eggs to be fertilized and hatched into chickens that will either become “Sunday lunch” or chickens that will lay more eggs.

North Carolina farmers raise cows for milk and beef production. North Carolina beef cattle farmers grow several breeds of cows which are turned into steaks, hamburger, beef stew, etc.

North Carolina ranks first in the production of this very nutritious vegetable. Approximately 36,000 acres are grown in the state. North Carolina growers produce nearly forty percent of the total U.S. production. Production is mostly limited to the coastal plain. Johnston, Wilson, and Nash are the top three counties in terms of sweetpotato acreage.

Dairy products come from (female) cows which have had a calf. Until a cow has a calf, she is not able to give milk. The number of dairy farms is declining in North Carolina. Today, much of the milk and other dairy products come into North Carolina today from other states. Dairy farmers are finding it more and more difficult to make a living in the dairy industry due to strict regulations with limited compensation for the requirements to stay in business.

Wheat is a grain, in the grass family, from which flour is made. Flour is a key ingredient in many foods we eat – biscuits, cakes, bread, etc. Wheat is planted in the fall or early winter and harvested in June in much of North Carolina.

North Carolina produces highbush varieties of blueberries from mid May through mid July and the season is extended through mid August with rabbiteye varieties. New Jersey has long been the number one blueberry producing state, but North Carolina's crop comes in earlier than theirs and thus supplements the supply.

North Carolina has 5,000 peanut farmers. North Carolina exported \$33.7 million worth of peanuts in 1995 which is up 74% from 1994. The peanut variety grown by North Carolina Peanut farmers is primarily the Virginia type. The Virginia type is distinguished by its large oval shape and reddish brown skin. Because they are the largest peanut grown, the Virginia type is frequently referred to as "the peanut of gourmets". They are valued by consumers for their large size and beauty as well as their outstanding flavor and pleasing crunchy texture. Most of North Carolina's peanuts are consumed "out-of-hand", as cocktail peanuts, instead of crushed into peanut butter or incorporated into candies. Americans consume over 12 pounds of peanuts per person per year. Since peanuts are a legume, they reduce the need for additional fertilizers as they return nitrogen

## Materials

- Smart board
- Nerf® or old regulation soccer ball
- Permanent marking pen
- List of Farm Income Cash Receipts From Farming by Commodity

## Procedures

### Activity 1

1. Using a Nerf® or old regulation soccer ball and a permanent marking pen, write each of the following words in one of the hexagonal blocks on the surface of the ball: Hogs, Broilers, Tobacco, Nursery, Turkeys, Cotton, Soybeans, Cows, Eggs, Dairy Products, Corn, Wheat, Peanuts, Christmas Trees, Sweetpotatoes, Cucumbers, Bell Peppers. Randomly write the numerals 1-15 in the pentagonal blocks. If there are not enough blocks for all words and all numbers, eliminate from the list from the end instead of the beginning.
2. Display the "Farm Income" table from "NC Highlights on the Smart Board using this link: <http://www.ncagr.gov/stats/2013AgStat/NCHighlights.pdf>
3. Thoroughly discuss the information provided, showing students how they can use a table to quickly obtain facts they may need. Read and point to the title *Farm Income: Cash Receipts from Farming by Commodity*. Make sure students understand the words *receipts* and *commodity*. In this situation, *receipts* are the monies brought into North Carolina from the sales of various farm commodities.
4. Discuss the fact that *commodities* include the different plants and animals raised and grown by farmers. Point out and explain what is meant by *rank*. Explain to students that this table shows the top 20 plants (crops) and animals raised by farmers in North Carolina and the order of importance based upon the amount of money each commodity brings into our state.

5. Place students in groups of two. Pair students so students of different reading levels can help one another. Students can work in pairs to interpret and read the graph *Farm Income: Receipts from Farming by Commodity*.
6. Read through the commodities, sharing information from the **Background Information**.
7. Carefully pronounce each name and have students repeat the pronunciation. Randomly call out a commodity and ask students, *what is the rank for this commodity?*. Randomly call out numbers and ask *what commodity is that rank?* Randomly call out a percentage number and ask *which commodity generated that percent of total sales?* For some percentages there may be more than one answer.

### Activity 2

1. Once students are familiar with the graph, have them form a circle in an empty space in the classroom, hall, gym, or outdoors.
2. Have students lay their papers on the floor, then gently toss the ball to one another.
3. Tell the students to hold the ball just as they catch it. Instruct the students to look at his or her left thumb. Ask, what word or number is your finger closest? If the student responds with a number, ask them to look on their sheet and tell you which commodity is ranked with that matching number. If the student responds with the name of a commodity, ask them to tell you the ranking of that commodity.
4. The student will look at their *Farm Income* sheet to determine the answer. If the student responds correctly, they toss the ball to another student and then sits down on the floor.
5. If the student responds incorrectly, they remain standing and toss the ball to another student.
6. Repeat the process until all students are seated. The student tossing the ball each time may toss only to a student who is still standing.

### Essential Files

- North Carolina Department of Agriculture and Consumer Services, NC Highlights Brochure  
<http://www.ncagr.gov/stats/2013AgStat/NCHighlights.pdf>

### Essential Links

- North Carolina Department of Agriculture and Consumer Services, NC Highlights Brochure  
<http://www.ncagr.gov/stats/2013AgStat/NCHighlights.pdf>
- My American Farm, Farmer's Market Challenge  
<http://www.myamericanfarm.org/classroom/games>

### Ag Facts

- In North Carolina crops are grown and pastures for farm animals are cultivated.

- North Carolina has more than 400 different soils.
- Corn, cotton, soybeans, and tobacco are some of the crops grown in North Carolina.
- North Carolina's agricultural industry, including food, fiber, and forestry contributes \$78 billion to the state's economy, accounts for more than 17 percent of the state's income, and employs 16 percent of the work force.
- North Carolina is one of the most diversified agriculture states in the nation. The state's 52,200 farmers grow over 80 different commodities, utilizing 8.4 million of the state's 31 million acres to furnish consumers a dependable and affordable supply of food and fiber.
- North Carolina produces more tobacco and sweet potatoes than any other state and ranks second in Christmas tree cash receipts and the production of hogs and turkeys. The state ranks seventh nationally in farm profits with a net farm income of over \$3.3 billion. Net income per farm in the state is over \$63,000.

### Extension Activities

- <https://www.teacherspayteachers.com/Product/Farm-Animal-Unit-807506>  
This is a great buy. It has graphing activities centered around farm animals as well as many other common core activities with a farm animals theme.
- Invite an extension agent in to bring samples of some of the soils found in NC and what kinds of crops can be grown on these types of soil.

### Sources & Credits

- <http://www.ncagr.gov/stats/2013AgStat/NCHighlights.pdf>
- <http://www.myamericanfarm.org/classroom/games>
- <http://www.agclassroom.org/teacher/stats/northcarolina.pdf>
- [www.teacherspayteachers.com](http://www.teacherspayteachers.com)

Farm Income:  
Cash Receipts from Farming by Commodity

Rank	Commodity	Percent
1	Broilers	24
2	Hogs	22
3	Turkeys	7
4	Tobacco	6
5	Greenhouse, Nursery, Floriculture & Christmas Trees	6
6	Soybeans	6
7	Corn	5
8	Cotton	4
9	Chicken Eggs	3
10	Cattle and Calves	3
11	Wheat	2
12	Sweet Potatoes	2