

North Carolina's Top Five Commodities (Broilers/Eggs) - Second Grade

Purpose

To introduce students to a major North Carolina Commodity—broilers. The students will examine the physical characteristics of chickens, and determine the stages of a chicken's life cycle.

Subject Area(s)

English Language Arts, Math, and Science

Common Core/Essential Standards

English

- **CCSS.ELA-Literacy RI.2.4** Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
- **CCSS.ELA-Language L.2.6** Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., *When other kids are happy that makes me happy*).

Math

- **2.NBT.1** Understand that the three digits of a 3 digit number represent amounts of hundreds, tens and ones.

Science

- **NC Essential Standard 2.L.2 Evolution and Genetics** Remember that organisms differ from or are similar to their parents based on the characteristics of the organism.
- **2.L.2.1** Identify ways in which many plants and animals closely resemble their parents in observed appearance and ways they are different.
- **2.l.2.1** Recognize that there is variation among individuals that are related.

Agricultural Literacy Outcomes

Culture, Society, Economy & Geography

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

Plants and Animals for Food, Fiber & Energy

- Provide examples of specific ways farmers care for animals.
- Explain how farmers work with the lifecycle of plants and animals (planting/breeding) to harvest a crop.
- Identify animals involved in agricultural production and their uses (i.e., work, meat, dairy, eggs).
- Identify examples of feed/food products eaten by animals and people.

Essential Questions

1. What is a broiler?

2. How are broiler chickens different from layers?
3. How do farmers care for broilers?
4. What types of food products do we get from chickens?
5. What are some of the differences between each life cycle phase of a chicken?

Vocabulary

Commodity: an agricultural product that can be bought and sold.

Good: a product that satisfies a need.

Broiler: young chickens that are raised for meat.

Poultry: types of domestic fowl (birds), such as chickens, turkeys, ducks and geese.

Breed: group of animals that share many of the same physical features. In chickens, it can be combs, skin, colors and patterns.

Incubation: process of warming the chick eggs before they hatch for about 3 weeks.

Brooding: the care given to an egg during incubation and the first few weeks after the chicks hatch.

Layer: a chicken used for laying eggs.

Brood: a group of newly hatched chicks.

Chick: a young chicken, newly hatched.

Hen: an adult female chicken of breeding age.

Rooster: an adult male chicken of breeding age.

Student Motivator

Print the *Chickens and Broilers KWHL chart* provided in the **Essential Files**. This should be kept on chart paper so that it can be used and posted throughout the entire lesson. Ask the students the following questions and place their answers in the first three columns. The fourth column will be filled in at the conclusion of **Activity 3**.

1. *What I Know.*
 - a. *What do you know about chickens?*
 - b. *Have you ever seen a chicken in real life?*
 - c. *Do you like to eat chicken? Do you like to eat eggs?*
2. *What I Want to Know.*
 - a. *What is a broiler?*
 - b. *What is a layer?*
 - c. *What are some of the characteristics of broilers?*
 - d. *Would you like to visit a hatchery?*
3. *How Can I Learn More?*
 - a. *Where can I find information about broilers/layers?*
 - b. *Who can I ask about broilers/layers?*

Background Knowledge

Broilers

Chickens are thought to come from wild fowl found in Southeast Asia; however, today chickens are raised on farms for their meat and eggs. Poultry farms are located throughout North Carolina for many reasons. First, North Carolina's climate is mild, and that makes it easy for chickens to survive and grow. Second, North Carolina has many rural areas beneficial for farms. Lastly, North Carolina has a great highway system, making it easy to transport goods, such as meat from chickens that we eat. Goods are types of products that satisfy needs.

Broilers are young chickens that are raised for their meat, and is considered one of North Carolina's top commodities, or agricultural product that is bought and sold. North Carolina is ranked fourth nationally in the production of broilers. In 2013, North Carolina produced approximately 7.8 million broilers. At any one time a large commercial farm may have 10,000 to 100,000 chickens. A broiler typically weighs 4 to 4.5 pounds. Broiler eggs are often produced in North Carolina and shipped to other states and countries to support the broiler industries in those places.

Chickens are essential to the agriculture industry in that Americans consume its meat more than any other meat-producing animal. Whether chickens are raised on large farms inside chicken houses or small farms as free range chickens, their history with humans has been one of a large food source, one that is priced less expensive to produce and purchase compared to pork or beef. Chickens' ability to produce both meat and eggs make them more diversified than any other farm animal.

Eggs/Layers

Most table eggs (eggs that are not fertilized and cannot hatch) are produced by layers. A layer is a term used for chickens that are good at laying eggs. A laying hen can produce 1 egg a day after she reaches maturity. If the egg is to be eaten, it is collected from the layer's nest each day. If it is to be hatched, the layer will sit on the egg for about 21 days also known as brooding. During brooding the process of incubation occurs and once the chick has developed in the egg, it will hatch.

Chicks and Chickens

Chicks and Chickens by Gail Gibbons is a non-fiction text that describes the different breeds of chickens, their physical traits, and depicts the life cycle of chickens from an embryo to an adult. The text also looks at how their bodies function, how they live, and their domestication by humans. Students will be exposed to how quickly a young chick grows into a rooster or hen for producing the 8 billion chickens consumed in the United States per year and the 250 eggs eaten yearly per person. Each stage of the life cycle is explained and identified with different physical features for all three: the rooster, the hen and the chick. Descriptive pictures of the chickens' digestive and reproductive systems, drawings of eggs in different states of development, and many interesting facts make this text a colorful and clear account of the domesticated chicken.

Materials

- *Chicks and Chickens* written by Gail Gibbons (Book/Booklet)
- *Chicken Vocabulary Cards* (Flash cards)

- *Egg Cards* (Picture Cards)
- *Chicken Life Cycle Map* (Worksheet)

Procedures

Activity 1

1. Show the students the front cover of *Chicks and Chickens* by Gail Gibbons. Begin a discussion about the physical differences between how chickens start (egg), chicks, hens, and roosters. Tell the students *they will be learning about the physical properties of chickens, the different uses for chickens, and their life cycle.*
2. Read pages 1-7 of *Chicks and Chickens* which will briefly outline the physical properties of chicks, chickens and roosters, the history of chickens, and their different uses.
3. Then, read pages 18-30 of *Chicks and Chickens* to the students. This section outlines how chickens lay eggs, egg incubation, and the life cycle of chickens. It also explains how eggs are collected on small and large farms, and how chickens are raised on farms for meat.
4. After reading, separate the students into groups of 3-4 students. If possible provide one book, *Chicks and Chickens* per group as a resource.
5. Divide the following *vocabulary cards* evenly among the groups: poultry, breed, incubation, layer, brood, chick, hen, rooster. Students will learn the meaning of broiler, commodity and goods in **Activity 2**.
6. Ask the students to write the meaning of the words on their cards.
7. Once all of the groups have finished, ask them to share their cards with the entire class. As they are explaining each word, find the page in *Chick and Chickens* that corresponds, and briefly show them the words, definitions and illustrations again.
8. Lastly, have each group write one sentence for each vocabulary word they were assigned. These sentences can be assessed for definition accuracy as well as conventions.

Activity 2

1. Read page 29 of *Chicks and Chickens* to the class. This page is titled, “How Chickens are Raised on a Large Farm for Their Meat.”
2. Define broiler to the class. Show the class the video [The Life Of A Broiler](#). Ask the class questions to prompt discussion, such as, *How are these chickens different from layers, or chickens that produce eggs? How do farmers care for these types of chickens?*
3. Define commodity and goods to the class. Ask the question, *What other commodities do we get from chickens?* to illustrate the production of eggs as a commodity in North Carolina.
4. Separate the class into groups of 7. Each student will represent a day of the week (Monday, Tuesday, Wednesday, etc.) that a farmer collects eggs.
5. Pass out one *Egg Card* to each student. On each *Egg Card*, ten eggs are represented, and models how ten ones equals one ten.

6. Starting with Monday, have the student pass their *Egg Card* to the next student (day), and then that student will pass all of their cards to the next student, and so on.
7. This will illustrate how multiple tens can be counted by ten, with each card representing ten.
8. Have the students all recite the totals each student possesses as they pass the cards (Monday has ten, Tuesday will have 20, Wednesday will have 30, etc).
9. Ask the entire class, *How many eggs does the farmer have after 5 days? 6 days? 7 days?* To deepen the learning, ask the students, *How many eggs will the farmer have after 8 days? 9 days? 10 days? How many eggs would a farmer collect if after 10 days three eggs were dropped and broken?* This will assist the students in understanding that 10 tens equals 100.
10. Give the groups vocabulary cards for commodity, goods, and broiler. Have the students define the words. They may also draw pictures to represent the words if time permits.

Activity 3

1. Pages 18-30 of *Chicks and Chickens* by Gail Gibbons talk about the chicken life cycle. Ask the students, *Do humans have a life cycle? How is the human life cycle different from the life cycle of a chicken? Does a chicken become an adult quicker or slower than a human?*
2. Tell the students they will illustrate the unique life cycle of the chicken with the next class activity.
3. Give each student a *Chicken Life Cycle Map*. Ask them to draw pictures of each stage of the chicken's life cycle. They may also write words to label their drawings. The four sections should represent: Egg, Chick, Young Chicken (Broiler), and Adult Chicken.
4. Have the students form pairs and compare their life cycle maps with each other. Ask the students to find 3 things that their partner did differently on their life cycle map.
5. Ask the students if they can place the vocabulary words they learned in **Activity 1** with the correct life cycle phase of the chicken.
6. Lastly, refer the students back to the *KWHL Chart* and have them fill in the last column for *What Have I Learned?* While they are filling in the last column, ask the students the questions found in the **Essential Questions** for clarification and knowledge.

Suggested Companion Resources

- Virtual Chicken
<http://www.virtualchicken.org/>
- Ag's Cool Commodities: Eggs
<http://www.ncagr.gov/agscool/commodities/eggkid.htm>

Essential Files

- [Chickens and Broilers KWHL Chart](#)
- [Chicken Vocabulary Cards](#)
- [Egg Cards](#)
- [Chicken Life Cycle Map](#)
- [Chicken Poem \(Extension Activity\)](#)
- [Chicken Poem Answer Sheet](#)

Essential Links

- The Life Of A Broiler
<https://www.youtube.com/watch?v=S3wPchH0Bnw>

Ag Facts

- Before the development of refrigeration, farmers had to rely on local ice houses to store eggs for them. These were buildings that contained large blocks of ice, and people would bring their perishable food items to store there.
- The average American consumes 90 pounds of chicken and 20 dozen eggs per year.
- A laying hen turns her eggs approximately 50 times a day to keep the embryo from sticking to the side of the shell.
- A female chicken can begin laying her first eggs at 5 months of age.
- Hens and roosters can live to be 12 years old.

Extension Activities

- Ask students to define some of the other words found in *Chicks and Chickens* by Gail Gibbons such as egg tooth, pip, clutch, preening, and pecking order and have them match the vocabulary word with the correct phase on their *Chicken Life Cycle Map*.
- Have the students complete the *Chicken Poem*. They will use some of the vocabulary words they learned in the activities to complete the poem.

Sources & Credits

- http://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=245&search_term_lp=Chickens
- http://www.ces.ncsu.edu/depts/poulsci/tech_manuals/poultry_industry.html
- <http://www.ncagr.gov/stats/facts/Broilers.pdf>
- http://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=270&search_term_lp=hen
- <http://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=262>
- http://www.scholastic.com/teachers/sites/default/files/posts/u133/pdfs/focus_on_a_cycle.pdf

- <https://oftodubrovnik.wordpress.com/category/food/page/2/>
- <http://www.ncagr.gov/agscool/commodities/eggkid.htm>