Poultry

*Lesson Plan for Grade 3, Science*

*Prepared by NAITC*

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

*for Mississippi Farm Bureau Federation - AITC*

# OVERVIEW & PURPOSE

Students will identify different breeds of chickens, examine physical characteristics, and determine the stages of a chicken's life cycle.

# EDUCATIONAL STANDARDS

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

L.3.1.1 Identify traits and describe how traits are passed from parent organism(s) to offspring in plants and animals.

ELA-SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, teacher-led) with diverse partners on grade 3 topics and texts, building on others’ ideas and expressing their own clearly.

**NALOs:**

T1.3-5 e Recognize the natural resources used in agricultural practices to produce food, feed, clothing, landscaping plants, and fuel (e.g., soil, water, air, plants, animals, and minerals).

# OBJECTIVES

* Students will identify different breeds of chickens
* Students will examine traits of chickens

# MATERIALS NEEDED

Activity 1: All About Chickens

* *Chicks and Chickens* written by Gail Gibbons
* Chicken Vocabulary List (1 per student)

Activity 2: Chicken Genetics

* *Genetic Characteristics of Chickens* PowerPoint (1)
* 1 set of *Chicken Pictures* per group of students
* 1 set of *Description Cards* for each group of students
* 1 blank *Chicken Characteristics Worksheet* per group of students

### Essential Files (maps, charts, pictures, or documents)

* [Genetic Characteristics of Chickens PowerPoint](https://docs.google.com/presentation/d/16sPFeFL3ZH0OALSWfPrLuaKbDxrxmv_R/edit?usp=drive_link&ouid=109918902593538910659&rtpof=true&sd=true)
* [Chicken Pictures, Description Cards, and Answer Key](https://drive.google.com/file/d/1FW_POJ0P4aJGYXFcaEvT-vu_x9GfUoOP/view?usp=drive_link)
* [Chicken Characteristics Worksheet](https://drive.google.com/file/d/1w84tWhZT22WxNI2DUjhPOOHGAQjD3RzT/view?usp=drive_link)
* [Life Cycle Wheel Text](https://drive.google.com/file/d/1Z7raMJNtp6y2Mo-Q4vzYfu3ztpDFTNH5/view?usp=drive_link)
* [The Hen Dance](https://drive.google.com/file/d/13HnBoXssKwnO72P6gjb4DX81VRWUgFYr/view?usp=drive_link)

# Lesson Set Up:

1. Have The Hatchery video pulled up for students to watch.
2. Have the book *Chicks and Chickens* by Gail Gibbons ready to read students.
3. Predetermine groups of students in groups of 3-4.
4. Print the Chicken Vocabulary List (1 per group)

Activity 2:

1. Have the Genetic Characteristics of Chickens PowerPoint pulled up for the students.
2. Predetermine your students into groups (3-4 per group).
3. Print the Chicken pictures (1 set per group) and the Chicken Characteristic worksheet (1 per group).
4. Print the Description cards (1 set per group).

# VOCABULARY

**breed:** group of animals that share many of the same physical features; in chickens it can be combs, skin colors, feather colors and patterns

**brood:** a group of newly hatched chicks

**chick:** a young chicken, newly hatched

**hen:** an adult female chicken of breeding age

**incubation:** process of warming the chick eggs before they hatch for about three weeks

**poultry:** domesticated fowl such as chickens, turkeys, ducks, and geese

**rooster:** an adult male chicken of breeding age

# Ag Facts:

* Chicken eggs are a good source of lutein which promotes eye health in humans.
* A hen turns her eggs approximately 50 times a day to keep the embryo from sticking to the side of the shell.
* The shell of an egg is extremely strong and can support up to 9 pounds without breaking with the pointed end up.
* A female chicken can lay her first eggs at 5 months of age.
* The color of a chicken egg is determined by the breed of chicken and in some cases can be the same color as their earlobes.

# Background information for teachers:

**All About Chickens**

Chickens are thought to have come from wild fowl found in Southeast Asia; however, today chickens are raised on farms for their meat and eggs. There are over 113 different **breeds**, each with different genetic strengths and characteristics. *Layer* is a term used for a breed of chicken that is a very good egg producer*.* A laying **hen** can produce 1 egg per day after she reaches maturity. *Broiler* is a term used for a breed of chicken that is raised for their meat. Broilers grow quickly and are heavy with a lot of muscle. Some breeds of chickens are not particularly good egg or meat producers, but are raised as pets, as a hobby, or for shows. These are known as *ornamental* breeds. Raising chickens for eggs, meat, or as a hobby is not new, it has been acknowledged that chickens were raised by people beginning over 4,000 years ago.

Refer to the book, Chicks *and Chickens* by Gail Gibbons to learn some of the terminology used in the **poultry** industry. *Chicks and Chickens* is a children's 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 stages of development, and many interesting facts make this text a colorful and clear account of the domesticated chicken.

**Chickens in the Agricultural Industry**

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 of chicken houses or small farms as free range chickens their history with humans has been one of a large food source priced less expensive to produce and purchase compared to pork and beef. Chickens' ability to produce both meat and eggs make them more diversified than other farm animals.

The leading producing states of meat chickens in the United States include Georgia, Alabama, Arkansas, and North Carolina. In Iowa, Ohio, Indiana and Pennsylvania the largest numbers of chicken eggs are produced. Both broilers and layers are known to be omnivores with a diet consisting of grain, seeds, and insects. Chickens raised on large farms in chicken houses eat a prescribed diet of chicken feed and water. Chicken feed is a mixture of corn, grains, meat, fish, vitamins and minerals.

**Chicken Genetics**

As you learn more about and compare breeds of chickens, you will notice many different characteristics which are a result of genetic variation within the domestic chicken species. Skin color, feather color, feather patterns and textures, body size, and egg shell color are all characteristics you can see. These are known as *phenotypes*. Some genetic characteristics you cannot see by simply looking at a chicken, but you can measure these traits by keeping good records. Examples include rate of growth and egg production. These characteristics are particularly important to poultry farmers. Farmers research the genetic characteristics of chicken breeds and choose the best breed or breeds for their farm.

**Life Cycle of the Chicken**

The life cycle of a chick begins in an egg. Eggs that are produced for eating are not fertilized and will never form into a chick. Eggs that have been fertilized have the potential of developing into a chick if the environment is correct. Eggs can be hatched in an **incubator** or by a hen. If the process takes place naturally, the hen will lay a clutch of 8-13 eggs, by laying one per day for 1-2 weeks. Once she starts laying on the eggs or **brooding** it takes 21 days for the chick to develop and be ready to hatch. The mother hen keeps the eggs warm and only leaves the nest briefly to feed. The hen also turns the eggs several times per day to keep the embryo from sticking to one side of the shell. The same process can take place in an incubator. The eggs are maintained at the proper heat and humidity levels and turned every few hours for the duration of the 21 days until they hatch.

Once the chick has hatched and dried, it will be covered in a soft, fuzzy down. Within a few weeks as the chick grows, it will develop its adult feathers. In 4-6 months the chicken will be fully grown. Hens will begin producing eggs around 5-6 months of age and the cycle can begin again. Common breeds of chickens used for meat in the broiler industry grow very quickly. They can grow from hatch to harvest in as little as 8-12 weeks!

# LEARNING PROCEDURES

Interest Approach:

1. Begin a discussion with the students about chickens and baby chicks to create interest*.* Ask the following questions:
   * *What do you know about chickens?*
   * *What kinds of sounds do chickens make?*
   * *Where do chickens live?*
   * *How are baby chicks born?*
   * *How long does it take for an egg to hatch?*
   * *Would you like to watch a baby chick being hatched?*
2. Show the short [video](http://www.msichicago.org/online-science/videos/video-detail/activities/the-hatchery/) of baby chicks hatching.

### Procedures

Activity 1: All About Chickens

1. Show the students the front cover of *Chicks and Chickens* by Gail Gibbons. Begin a discussion about the physical differences and similarities from the picture which displays a rooster, hen, and a chick. Point out the size, color, and shape of each animal example. Tell the students they *will be learning about the similarities and differences in chicken breeds and the body parts of a chicken.*
2. Read pages 1-17 of *Chicks and Chickens* which will take you through the differences of roosters, hens, and chicks. These pages also display and label their body parts and identify certain breeds. Be sure to point out that roosters can be more colorful than hens within the same breed.
3. Separate the students into groups with three to four children. Give each group a *Chicken Vocabulary List* and have them brainstorm what they think the vocabulary words represent. Each group can be given a different list of vocabulary words. Have students define what they think the words mean and record the meaning in the space provided on the lists. If time permits they can also draw a picture to represent the meaning for each word.
4. Once all of the groups are done have each group report the words with their definitions. As they define a word that was labeled as a body part on the chicken seen in *Chicks and Chickens*, point this out in the book. The lists of vocabulary terms are grouped together focusing on certain topics. Point out that list #1 are types of chickens, list #2 are physical features found in chickens, list #3 are parts of the digestive system, list #4 are chicken behaviors, and list #5 are chicken housing needs.
5. Next, have each group write three sentences using a vocabulary word from their list in a sentence. These sentences can be assessed for definition accuracy as well as conventions.

Activity 2: Chicken Genetics

1. Use the *Genetic Characteristics of Chickens* PowerPoint to teach students about the basic genetic characteristics found in various breeds of chickens. Explain that each breed of chicken has specific genes which indicate what it will look like, how many eggs it will produce, how large its body will be, etc.
2. As you go through the PowerPoint, explain that some genetic characteristics can be seen simply by looking at a chicken. For example, feather color, feather texture, type of comb, etc. However, other characteristics cannot be seen simply by looking at a chicken. These characteristics can be measured by farmers as they keep records. For example, a farmer can record how many eggs a hen lays or how much a chicken weighs.
3. With a basic introduction to chicken characteristics, your students are ready to learn about a few chicken breeds. Divide your class into groups and give each group a set of eight *Chicken Pictures* and a blank *Chicken Characteristic* worksheet. Have the students look at the pictures and identify the characteristics of the chicken that are associated with its appearance. They will record these characteristics in the box. Once they are finished have the groups share their characteristics for each chicken. Compare each group's characteristics to each other. Are they similar or different? Were they able to identify feather color, egg color, feather texture, etc? Were they able to determine if the picture represented a rooster, hen, or chick?
4. Next, give each group one set of *Description Cards*. The students will match the Description Cards to the pictures. They should also be asked to compare their own, written descriptions from step 3.
5. Review and summarize with students that an animal's genetics determine its physical characteristics (feather color, comb type, etc) as well as it's performance (egg or meat production). Ask your students to apply what they have learned by choosing a breed of chicken that would be best for each scenario below:
   1. *Imagine you are a chicken farmer and you are raising chickens for their meat. Which breed would you choose?*
      1. The Cornish chicken (#3) is the best meat producing chicken
   2. *Imagine you are the manager of a layer farm. Your goal is to produce quality, white-shelled eggs. Which breed of chicken will likely be best for your farm to produce the most eggs?*
      1. The White Leghorn (#2) is the best choice. White leghorn's are the most widely used breed in white-shelled egg production in the United States.
   3. *Imagine you are raising chickens in your backyard for a hobby and you'd like to learn how to show them. Which breed would you choose?*
      1. Students can choose any breed they'd like. Ornamental breeds such as the Cochin, Silkie, and Polish Crested are raised mostly for their novel feathering patterns. Hens of these breeds do produce eggs, but not as efficiently as other breeds.
   4. *Imagine you are raising chickens for eggs and you'd like brown shells. Which chicken would you pick?*
      1. The Sussex, Rhode Island Red, and Plymouth Rock all produce brown eggs. Be sure your students know that there is not a nutritional difference between white-shelled eggs and brown-shelled eggs. It is simply a consumer preference.
6. Ask the students questions that refer to the genetics of a chicken. *If both parents are the same breed what would you expect the offspring to look like? If the parents are different breeds, what would you expect the offspring to look like?*

**Concept Elaboration and Evaluation**

* Compare the genetics of the chicken to humans. Ask the students,

**"What characteristics do you have that are similar or different from your parent(s)?"**You can use the chicken pictures as a visual when asking these questions. Be sure to point out once again the similarities and differences found in the breeds.

# Additional Learning Procedures

To help students review and elaborate more about poultry, try using the [“Think Pair Share”](https://drive.google.com/file/d/1XlGWVB1h-9KjQE2Xbc7bHhq-PVrGNbTa/view?usp=drive_link) method to allow students to think deeper and make new connections.

Additional Texts to Include:

[What's for Lunch, Eggs](https://www.agfoundation.org/recommended-pubs/whats-for-lunch-eggs)

[The Powerful Protein Group](https://www.agfoundation.org/recommended-pubs/the-powerful-protein-group)

[Chickens](https://www.agfoundation.org/recommended-pubs/chickens1)



Source: <https://www.agclassroom.org/teacher/matrix/>

*For more information and additional lessons visit*

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