

LET'S LEARN ABOUT CHICKENS!

An Introduction to the Poultry Project

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Tennessee 4-H Youth Development

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Skill Level
Beginner

Learner Outcomes

The learner will be able to:

- Recall the importance of the poultry industry.
- Demonstrate basic knowledge of chickens and their eggs.
- Explain the anatomy of an egg and how fertilized eggs differ from unfertilized eggs.
- Model how to candle eggs.

Educational Standard(s) Supported

4th Grade Science

- GLE 0407.4.1 Recognize the connection between reproduction and the continuation of a species.
- GLE 0407.INQ.2 Select and use appropriate tools and simple equipment to conduct an experiment.

Success Indicator

- ID parts of an egg.
- Candle an egg to tell if it is fresh.

Time Needed

30-45 minutes

Materials List

- "All About Chickens" PowerPoint.
- Eggs of various freshness.
- Flashlights.
- Cleaning supplies in case of broken eggs.

Introduction to Content

Poultry is defined as any domestic bird raised specifically for meat and egg consumption. This definition can include chickens, turkeys, ducks, quail and others. Poultry is the second most-consumed meat in the world, next to pork. It is a very important part of Tennessee's economy because it creates 27,000 jobs and raises about \$6.5 billion (2016).

Today, we will focus on the most popular type of poultry, the chicken. Let's learn about chickens and some poultry activities you can be involved in through 4-H!

Introduction to Methodology

This hands-on, practical activity will require learners to use critical thinking skills to investigate the source of food and understand the poultry industry.

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Terms and Concepts Introduction

Pullet — A young, female chicken.

Hen — An adult, female chicken.

Rooster — A male chicken.

Broiler — Chicken raised for meat.

Albumen — The “white” of the egg that provides food for the chick.

Chalazae — Strands that anchor the yolk.

Yolk — The “yellow” of the egg and provides food for the chick.

Germ — White spot on the yolk where the embryo can begin to develop.

Setting the Stage

Make sure to have all materials ready. Ask opening questions to start a discussion about poultry in general and to assess prior knowledge.

Opening Questions

- What is poultry? What animals are considered poultry? (*Domestic fowl, such as chickens, turkeys, ducks and geese.*)
- What agricultural products do we get from poultry? (*Eggs, meat, feathers.*)
- How important is the poultry industry to our national economy? (*More than 1 million jobs and \$197 billion in economic activity.*)
- Do any of you raise chickens? What needs do they have? (*Food, water, shelter.*)
- Have you ever thrown out eggs that were past the expiration date? (*They still may be good!*)

Experience

Show the “All About Chickens” PowerPoint and discuss the following points:

- Ask if anyone knows what male and female chickens are called, or ask, “What is a pullet?” Discuss these terms. (*Slide 2*)
- Ask learners to list any chicken breeds they know. Look at some examples. (*Slide 3*)
- Conduct a poll of learners to see if they think a rooster has to be present for hens to produce eggs. Explain the difference in fertilized and unfertilized eggs. (*Slide 4*)
- Discuss with students the process of how a chicken forms inside the eggs. Show video clip on slide 5. (*Slide 5-6*)
- Go over egg anatomy and how to see the parts by candling. (*Slides 7-9*)

Divide the class into groups of four or five. Give each group a flashlight and two eggs, one fresh and one old.

- Allow the students to look inside the eggs and locate the yolk and air cell. (Be sure to turn off the lights!)
- Allow students to decide which egg is a Grade A and which is a Grade B.
- Crack open an egg, if desired, to look at broken out quality.

Tips for Engagement

- Visit each group to make sure everyone has candled the eggs and can tell the difference between a healthy egg and an unhealthy egg.
- Ask students to describe how they would teach a parent or sibling to candle an egg at home.

Share

Ask learners:

- What were the parts of the egg you could see? (*Yolk, albumen, air sac.*)
- Were the eggs fertilized? (*Review slide on stages of development in presentation.*)

Process

Ask learners:

- What is the difference between white and brown eggs? (*The color of the shell depends on the chicken that laid the egg. Some eggs can even be blue, green or yellow depending on the breed that produced it.*)

Generalize

Have learners discuss if there are there other ways to check an egg for freshness. (Example: Place the egg in a bowl of water. If the egg lays on its side at the bottom, it is still quite fresh. If the egg stands upright on the bottom, it is still fine to eat, but it should be eaten very soon or hard-boiled. If the egg floats to the top, it's past its prime, and not good for eating.)

Apply

Lead discussion regarding:

- Why do you think the air cell gets larger over time? (*As the egg cools, the liquid inside contracts and makes the air cell larger.*)
- Besides to test for freshness, why would it be important to candle eggs? (*Determine if they are fertilized; assess level of chick development inside the egg.*)

References

Tennessee Department of Agriculture

Tennessee Poultry Association

Food and Agriculture Organization of the United Nations

tn.gov/agriculture

tnpoultry.org

fao.org/ag/againfo/themes/en/meat/backgr_sources.html

Life Skill(s)