Animals Inside & Out

Nebraska Extension 4-H Animal Science Signature Outcome Team Curriculum

3rd - 5th Grade
ANIMALS INSIDE & OUT

Field Day Curriculum

Animal Science Signature Outcome Team
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Introduction

Animal Science Signature Outcome Team
Lesson Title: Introduction (Revised 2/12/2015)

Source: 4-H Project Manuals

Subject Matter Area(s): Animal Science, Livestock, Basic Terminology, Introduction to Systems

Grades: 3-5th

Careers: Veterinarian, Rancher, Farmer, Animal Scientist

Description of Activity: The introduction is designed for young people to learn about livestock and their uses, basic terminology, livestock breeds and livestock body systems.

Time Involved: 30 Minutes

Required Materials: Print off of the animal species cards cut into sections. Print off egg picture. Several different breeds of each species of animals out of Lab Kits. Puzzles in envelopes.

What is the lesson objective?
Students will be able to identify the uses of livestock.
Students will learn basic terminology of livestock and will recognize names of specific species.
Students will identify different breeds of livestock.
Students will be introduced to body systems
Students will identify 3 Animal Science careers.
Instruction:
Welcome

We would like to welcome you to Animals Inside & Out! We have some exciting things lined up to help you learn about when it comes to Animals. There are hundreds of different animals that we could talk about, but Animals Inside & Out is going to focus on Livestock. Who can tell me what Livestock is?

Definition: Livestock are domesticated animals raised in an agricultural setting to produce food, fiber and milk.

What animals are considered Livestock?
Beef
Sheep
Swine
Goats
Poultry

These are the animals that we will be focusing on in this program.

What are the main uses for the livestock we just mentioned?
Meat
Wool
Milk

If you are interested in animals there are many different careers that you can choose. One of the careers that you might choose is to be a Veterinarian. If you are a Veterinarian or a Vet you are considered the expert. In other words if someone has a question about a pig, they would expect you to know the answer. A vet must know very basic information such as what is a cow or what is a Ram and more detailed information as well. What other careers could you choose that you would need to have basic knowledge of livestock for?

Examples:
Veterinarian       Feed Salesperson       Animal Nutritionist
Rancher            Animal Scientist      Extension Educator
Farmer             Ag Teacher            Etc.
Those are all careers that we would have to know basic information related to livestock for. So let’s start by learning some of that information.

**Basic terminology—Matching Game**

Give each child a postcard with each term on it. Have them pair up with the species that they represent. After categorizing, have each student give their definition of their term. Have each group share their cards and definitions.

**Beef**
- Heifer—Young female bovine cow prior to the time that she has produced her first calf.
- Bull—Bovine male. Usually refers to male animals of breeding age.
- Steer—Bovine male castrated prior to puberty.
- Cow—Bovine female that has produced a calf.

**Swine**
- Sow—Female hog that has produced one or more litters of pigs.
- Gilt—Young female that has not yet produced her first litter of pigs.
- Barrow—Castrated male pig.
- Boar—Intact male pig.

**Sheep**
- Ewe lamb—A female sheep that is less than one year old and is usually not bred.
- Ewe—A female sheep.
- Wether—A male sheep that has been castrated.
- Ram—A male sheep also known as a “buck.”

**Goats**
- Buck—An uncastrated male goat, sometimes called a “billy.”
- Kid—A goat under one year of age.
- Doe—Adult female goat.
- Wether—A castrated goat.

**Chickens**
- Rooster—Adult male chicken.
- Hen—An adult female chicken.
- Chick—A young chicken or baby bird.
Each species is unique in that they are made up of different breeds of animals. What is a breed?

Distinct animal or plant: a strain of an animal or plant with identifiable characteristics that distinguish it from other members of its species, especially one whose characteristics are preserved by controlled mating or propagation

What are some common breeds or familiar breeds of livestock that you have heard before?

<table>
<thead>
<tr>
<th>Beef</th>
<th>Hereford</th>
<th>Angus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swine</td>
<td>Hampshire</td>
<td>Duroc</td>
</tr>
<tr>
<td>Sheep</td>
<td>Suffolk</td>
<td>Hampshire</td>
</tr>
<tr>
<td>Goats</td>
<td>Boer</td>
<td>Nubian</td>
</tr>
<tr>
<td>Poultry</td>
<td>Leghorn</td>
<td>Guinea</td>
</tr>
</tbody>
</table>

How do you know what breed an animal is?
By looking at unique characteristics of a particular animal

Now that we have learned some basic things about each species, let’s think about how they are made. Do you think that the breed of an animal makes a difference on what is inside of them?

Some breeds are made more for certain purposes. Such as an angora sheep is more of a wool breed rather than a meat breed, where as a Suffolk sheep is more of a meat breed. A Hampshire hog is known for heavy muscling, while a Yorkshire is known for lean meat and low backfat. All breeds have their own unique qualities, but inside are all animals from each species made basically the same?

Egg Demonstration

Let’s take an egg for instance. I have a green egg, brown egg and a white egg. What is the difference in these eggs?

Come from different breeds.

If I crack them open, will they look exactly the same? Yes they will, but if we hatch these eggs they will be different breeds. But essentially inside they are all the same.
All Livestock are made up of the same type of things. They are called systems. Certain species may have some unique qualities of some systems. But basically they are the same.

What is a system?

Background Information

What is a System?
A system is a group of organs that work together and provide an organism with an advantage for survival. It is the most complex organization in the animal’s body and the final level of the progression from **cells** to **tissues** to **organs** and then **systems**. Systems work alone and with other systems to allow your body to maintain homeostasis. **Homeostasis** is a stable internal environment that allows animals (and cells) to survive.

**Systems**

What makes an animal able to run, play, work, eat and breathe? Body Systems. A healthy body depends on many different organs working together in systems.

What is an organ?
An organ is a body part with a specific function.

Organs Working Together
Organs are a part of every body system. The heart is classified as an organ and it is a part of the **circulatory system**. Organs can work within several systems of your body.

Background Info--

Systems Can't Work Alone
We just explained how organs could be a part of several systems. Similarly, systems rarely work alone. All of the systems in an organism are interconnected. A simple example is the connection between the circulatory and respiratory systems. As **blood** circulates through the body...
of an animal, it eventually needs fresh **oxygen** \((O_2)\) from the air. When the blood reaches the **lungs**, part of the respiratory system, the blood is re-oxygenated. Your stomach, part of the digestive system, constantly interacts with your endocrine system and spreads hormones throughout your body.

Split students into groups.

**I am going to give each group an envelope with a puzzle in it.** As a team you will put your puzzle together. Each puzzle represents a system. Your puzzle is similar to each body system, each piece plays a very important part in how the system works. If you are missing a piece the system will not work and the animal cannot live. All systems rely on each other to survive or they interlock with each other to function.

**Once you have your puzzle together we are going to discuss each system.**

Hang on the wall the name of each system.

**On the wall we have the name of the five systems we are talking about today:** Muscular, Skeletal, Respiratory, Circulatory and Digestive. Now let’s match up each system with the main part that goes with each system.

- Muscular—Muscles
- Skeletal—Bones
- Respiratory—Lungs
- Circulatory—Heart
- Digestive—Stomach

**Now let’s take a look at your puzzles.**

Go to each group and have them report to the whole class which system their puzzle fits into.

- Cow—Digestive
- Horse—Circulatory
Sheep—Skeletal

Pig—Muscular

Chicken—Respiratory, Digestive, Circulatory

The systems in an organism all work together to keep the animal alive and healthy. Think about something as simple as how the circulatory and respiratory system work together to keep an animal alive.

Think for a moment … If you open the mouth of an animal which of these systems do you think you would see?
Digestive
Respiratory
Muscular
Skeletal

You can see parts of all of the systems. The mouth chews for the digestive system. The throat is an opening for the respiratory system. The tongue is a part of the muscular system. You can also see parts of the skeletal systems.

These systems all work together to make up animals that we use for meat, wool and milk. You will learn more in depth about each one as we learn more about Animals Inside & Out.
Careers
Cow  Heifer

Bull  Steer
Sow  Gilt
Boar  Barrow
Buck  Doe
Kid    Wether
Rooster

Chick

Hen
Digestive System
Circulatory System
Skeletal System
Muscular System
Respiratory System
STOMACH

I’m HUNGRY
HEART
BONES
MUSCLES