

VETERINARIAN SUMMER CAMP

 **CURIOSITY ZONE**[®]
LET'S TEACH SCIENCE.[™]



UNIT 2: FARM ANIMALS





Veterinarian Summer Camp Unit 2: Farm Animals

Time: 3 hours

Ages: 4-10

Learning Objectives:

- What is a domestic animal?
- What are some examples of farm animals?
- Why is it important that vets take care of farm animals?
- What are some products that we get from farm animals?

Word of the Day: BOVINE

Overview: Activities, Materials & Prep

Introduction to Camp (15 mins).....	1
Introduction to the Subject & Word of the Day (15 mins).....	1
Big Demo of the Day: Milk a Cow! (10 mins).....	2
Materials:.....	3
<input type="checkbox"/> Recycled containers of butter, milk, ice cream, cheese, yogurt, etc.	3
<input type="checkbox"/> Latex glove	3
<input type="checkbox"/> Water	3
<input type="checkbox"/> Thumb tack or similar.....	3
<input type="checkbox"/> Large plastic beaker or cup.....	3
<input type="checkbox"/> Rubber band.....	3
<input type="checkbox"/> White washable paint (optional)	3
Prep:	3
<input type="checkbox"/> Add white washable paint to water to create something that looks like milk (optional).....	3

<input type="checkbox"/> Fill the glove with water, close the top and secure by using a rubber band.	3
Cows: Milk a Cow (15 mins).....	3
Materials:.....	3
<input type="checkbox"/> Latex gloves – 1 for every 2 students.....	3
<input type="checkbox"/> Water	3
<input type="checkbox"/> Thumb tacks or similar – class set	3
<input type="checkbox"/> Large plastic beakers or cups – 1 for every 2 students	3
<input type="checkbox"/> Rubber bands – 1 for every 2 students	3
<input type="checkbox"/> White washable paint (optional)	3
<input type="checkbox"/> Plastic bins – class set; at least 1for every 4 students.....	4
Prep:	4
<input type="checkbox"/> Add white washable paint to water to create something that looks like milk (optional).....	4
<input type="checkbox"/> Fill up the gloves with water, close the top and secure by using a rubber band.	4
Cows: Make Glue using Milk (25 mins)	4
Materials:.....	4
<input type="checkbox"/> Electric stove top, hot pot, microwave or similar heat source. (Else, you will need to make the glue ahead of time; see below.)	4
<input type="checkbox"/> Room temperature whole milk – 1.5 cups for every 15 students	4
<input type="checkbox"/> White vinegar – 3 teaspoons for every 15 students.....	5
<input type="checkbox"/> Baking soda – 1 Tablespoon for every 15 students.....	5
<input type="checkbox"/> Water	5
<input type="checkbox"/> Saucepan.....	5
<input type="checkbox"/> Glass beaker, glass measuring cup or similar	5
<input type="checkbox"/> Spoon	5
<input type="checkbox"/> Coffee filter	5
<input type="checkbox"/> Small paper cups – 1 per student.....	5
<input type="checkbox"/> Popsicle sticks – 1 per student.....	5
<input type="checkbox"/> Scissors – class set	5
<input type="checkbox"/> Craft supplies – construction paper, eyeball stickers, feathers, other stickers, etc. – class set.....	5
<input type="checkbox"/> Markers – class set	5

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[Consider decorating some areas like an animal hospital and staging the “injured” stuffed animal that will be used in the Medical Mystery of the Day (see lesson plan below) by the door or front of the room; this will get kids excited about the day’s activities.]

Introduction to Camp (15 mins)

<If doing the weeklong camp, skip ahead to the Introduction to the Subject & Word of the Day & increase your other activities by a few minutes.>

Welcome to Veterinarian Camp! Today we will be students attending veterinary school. We will learn all about different animals and different ways to take care of these animals. We’ll then use what we learn to treat injured animals in our make-believe animal hospital.

Each day we will have a theme and a “Word of the Day.”

Invite the students to say their name and something they would like to share about themselves. This can be anything from what grade they are going into, what their hobbies are, what their favorite animal is, etc. Make sure that all of the kids know each other and are familiar with the teacher and TA.

During camp there are some important camp rules that we must follow:

1. Listen when the teacher is talking so that no one misses any important instructions.
2. Raise your hand and wait for the teacher to call on you before speaking.
3. NEVER put anything in your mouth unless the teacher says it is ok.
4. NEVER leave the lab at the end of camp unless there is a parent present to pick you up!

Introduction to the Subject & Word of the Day (15 mins)

Ask the students some questions to get them excited about the camp: Review: What is a veterinarian? Other than house pets, can you think of other types of domestic animals? What are some animals that live on the farm? How can vets take care of these animals?

The Science:

What is a domestic animal? Many animals that vets care for are considered domestic animals. A domestic animal is any animal that humans feed and take care of. For example, cats, dogs, and rabbits are domestic animals that often live inside people’s houses; we call these pets. Cows, chickens and goats are examples of domestic animals that live on a farm. Today we will learn about farm animals.

Chickens are domesticated birds that provide us with both food and feathers. A female chicken – also called a hen – lays an egg once a day. The eggs can be brown or white depending on the breed of the chicken and what it’s being fed. Chicken feathers are also collected and used to stuff soft, warm things like pillows, comforters, sleeping bags and coats. The feathers used, called “down,” are the very soft feathers that grow

underneath the tougher exterior feathers. These softer feathers help to keep the birds warm. (These days, goose down is considered to be the softest and warmest – but chicken down is still sometimes used.)

Cows are large land mammals that are herbivores (plant eaters); they primarily eat grass. Cows have been giving people food for thousands of years. The average cow produces more than 2,000 gallons of milk per year. Farmers usually milk each cow twice a day; they get the milk by squeezing the cow's udder. The milk is then sent off to a factory to be pasteurized then turned into the milk we drink at home, cheese, butter, yogurt, cream and lots of other things. Food that is made from animal milk is called a "dairy" product. While we mainly consume cow's milk in America, we sometimes drink milk from other domestic animals such as goats and sheep. "Bovine" means anything that is of or relating to cows.

Like cows, horses are also large land mammals. There are more than 350 breeds of horses, but there are only four main kinds: light horses (these include thoroughbreds and racehorses), draft horses (these include Clydesdales), ponies (these are horses smaller than 14.2 hands, such as Shetlands), and wild horses. Fully grown male horses are called stallions; fully grown females are called mares. When they are young, male horses are called colts and female horses are called fillies. Baby horses are all called foals.

Show Videos. Show videos of different farm animals including horses, cows, and chickens. Also show videos of vets working at a farm. Suggested videos are available on the Curiosity Zone YouTube channel:

https://www.youtube.com/user/CuriosityZone/playlists?shelf_id=6&view=50&sort=dd



Big Demo of the Day: Milk a Cow! (10 mins)

The Science:

What are dairy products? Dairy products are products made from milk. Examples include milk, butter, cheese, yogurt and ice cream. Farmers keep cows on dairy farms to produce milk. The farmers milk the cows every day, and that milk is then turned into the products we drink and eat every day. We sometimes also eat dairy products made from the milk from other mammals, such as goats, sheep and camels!

What is an udder? Udders are found in some female mammals, such as female cows, goats and sheep. The udder is made of a large sac that contains the mammary glands and pairs of teats. Milk comes out of the teats that hang down from the udder. This is how cows, goat and sheep feed their young. This is also how farmers collect milk on dairy farms.

Materials:

- Recycled containers of butter, milk, ice cream, cheese, yogurt, etc.
- Latex glove
- Water
- Thumb tack or similar
- Large plastic beaker or cup
- Rubber band
- White washable paint (optional)

Prep:

- Add white washable paint to water to create something that looks like milk (optional).
- Fill the glove with water, close the top and secure by using a rubber band.

Procedure:

- Show the students the various dairy product containers. Ask them what they know about them, and where they come from. Review the science above.
- Explain that the students will learn how to milk a cow using the “udder” you have made. Talk about what udders are (see information above). Has anyone ever milked a cow before?
- Have a volunteer hold up the “udder.” Poke a hole in 2 of the fingers of the “udder” using the thumb tack or similar.
- Squeeze near the top of one of the fingers and pull down to get the “milk” to squirt out and into a beaker or cup.
- Explain that this will be their first activity in camp – to “milk” their own udder!

<If you have two groups, split them up now.>

Cows: Milk a Cow (15 mins)**The Science: What is an udder?**

See above.

Materials:

- Latex gloves – 1 for every 2 students
- Water
- Thumb tacks or similar – class set
- Large plastic beakers or cups – 1 for every 2 students
- Rubber bands – 1 for every 2 students
- White washable paint (optional)

- Plastic bins – class set; at least 1 for every 4 students

Prep:

- Add white washable paint to water to create something that looks like milk (optional).
- Fill up the gloves with water, close the top and secure by using a rubber band.

Procedure:

- Have the students pair up in teams and give each team a beaker or cup.
- Set the cup into a plastic bin to help catch spills. Have 2 teams share each bin.
- Poke holes in 2 of the fingers of each water-filled glove. Prepare one for every 2 students. (Don't do this ahead of time, as the water may leak out.)
- Have one team member hold up the udder while the other milks the cow and squirts the "milk" into the beaker or cup. The students can take turns back and forth for as long as time allows.

Cows: Make Glue using Milk (25 mins)

The Science:

Milk contains a protein called casein, which is a natural adhesive. Under normal pH levels, casein is dispersed evenly in the milk. When vinegar (an acid) is added to the milk, the pH lowers, which causes the casein to coagulate, or come together to make white blobs. The blobs are called curds. These same curds are also found in cottage cheese. The liquid that the blobs of casein are floating in is called "whey."

Baking soda is added to the curds to neutralize the casein. This causes a chemical reaction between the vinegar that is still mixed with the casein and the baking soda, causing fizzing. Once the pH increases from the addition of baking soda, the pH is closer to 6.5, causing the casein to liquefy again.

What is pH? Scientists use something called a "pH scale" to determine how acidic or basic a substance is. The pH scale runs from 0-14, with acids between 0 and 6 and bases between 8 and 14. Distilled water is a 7 on the pH scale – right in the middle. This means that water is neither an acid nor a base. Instead, it is what scientists call "neutral." Milk has a pH of about 6.5.

The term "acid" comes from the Latin word "acidus" which means "sharp." Acids taste sour (though certainly you cannot put all acids in your mouth!) and are corrosive to metals. A few examples of acids are orange juice, lemon juice, and vinegar. Bases feel slippery to the touch (like soap). Some examples of bases include baking soda and bleach.

Materials:

- Electric stove top, hot pot, microwave or similar heat source. (Else, you will need to make the glue ahead of time; see below.)
- Room temperature whole milk – 1.5 cups for every 15 students

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Vitals Checklist – Cow

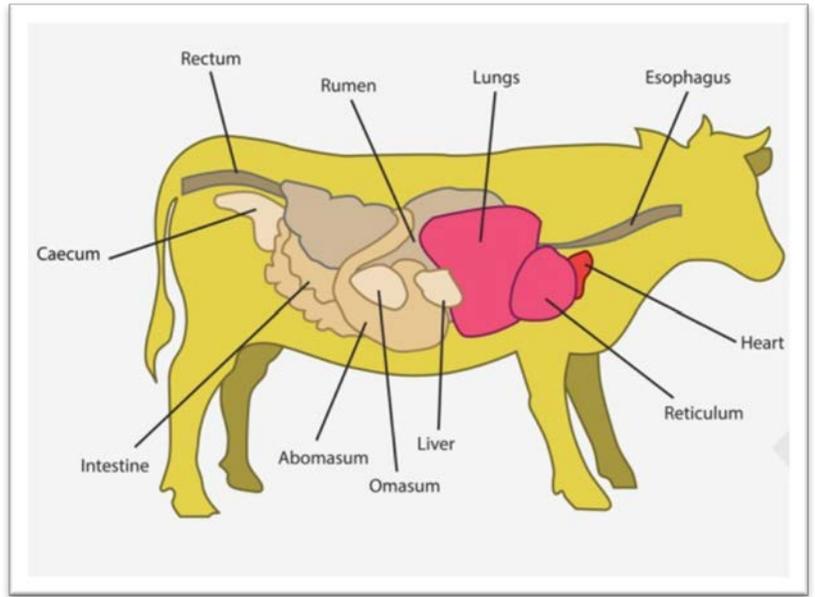
Temperature: _____

Weight: _____

Length: _____

Eyes: clear cloudy

X-rays or other: _____



Vitals Checklist – Chicken

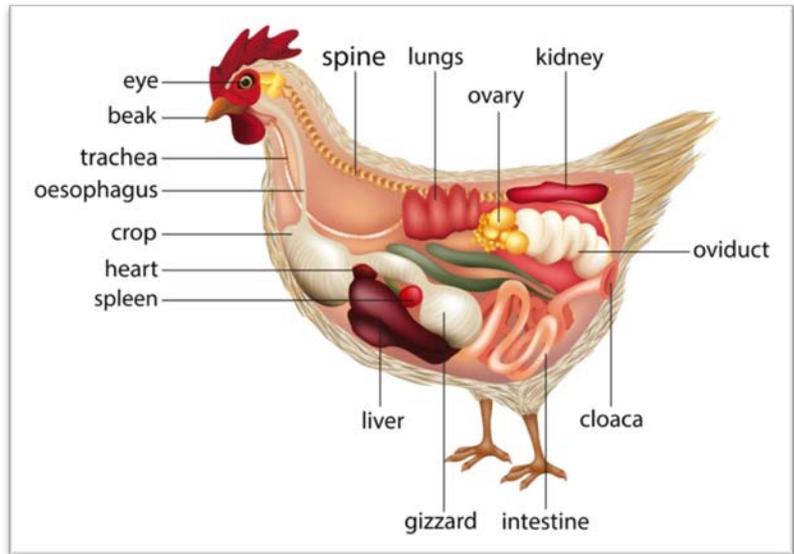
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Weight: _____

Length: _____

Eyes: clear cloudy

X-rays or other: _____



Vitals Checklist – Horse

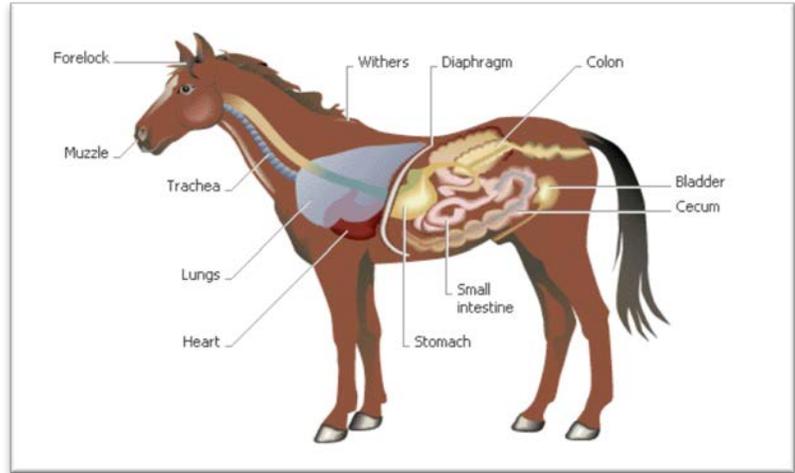
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Weight: _____

Length: _____

Eyes: clear cloudy

X-rays or other:



Vitals Checklist – Pig

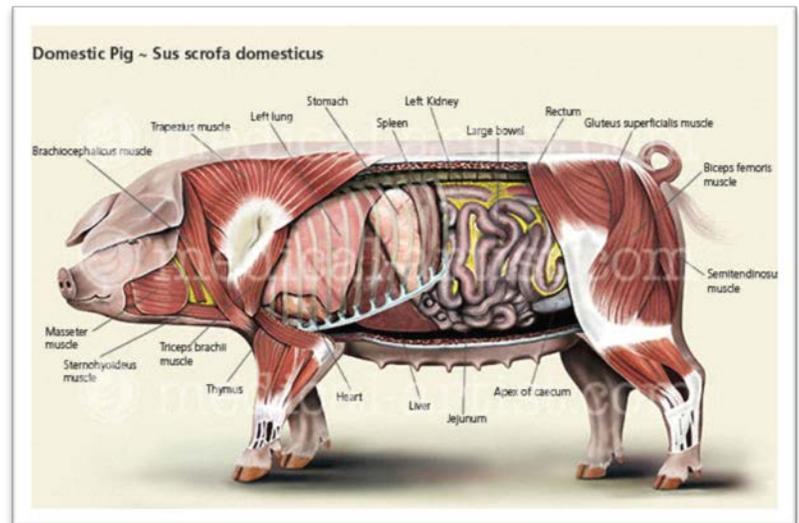
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Weight: _____

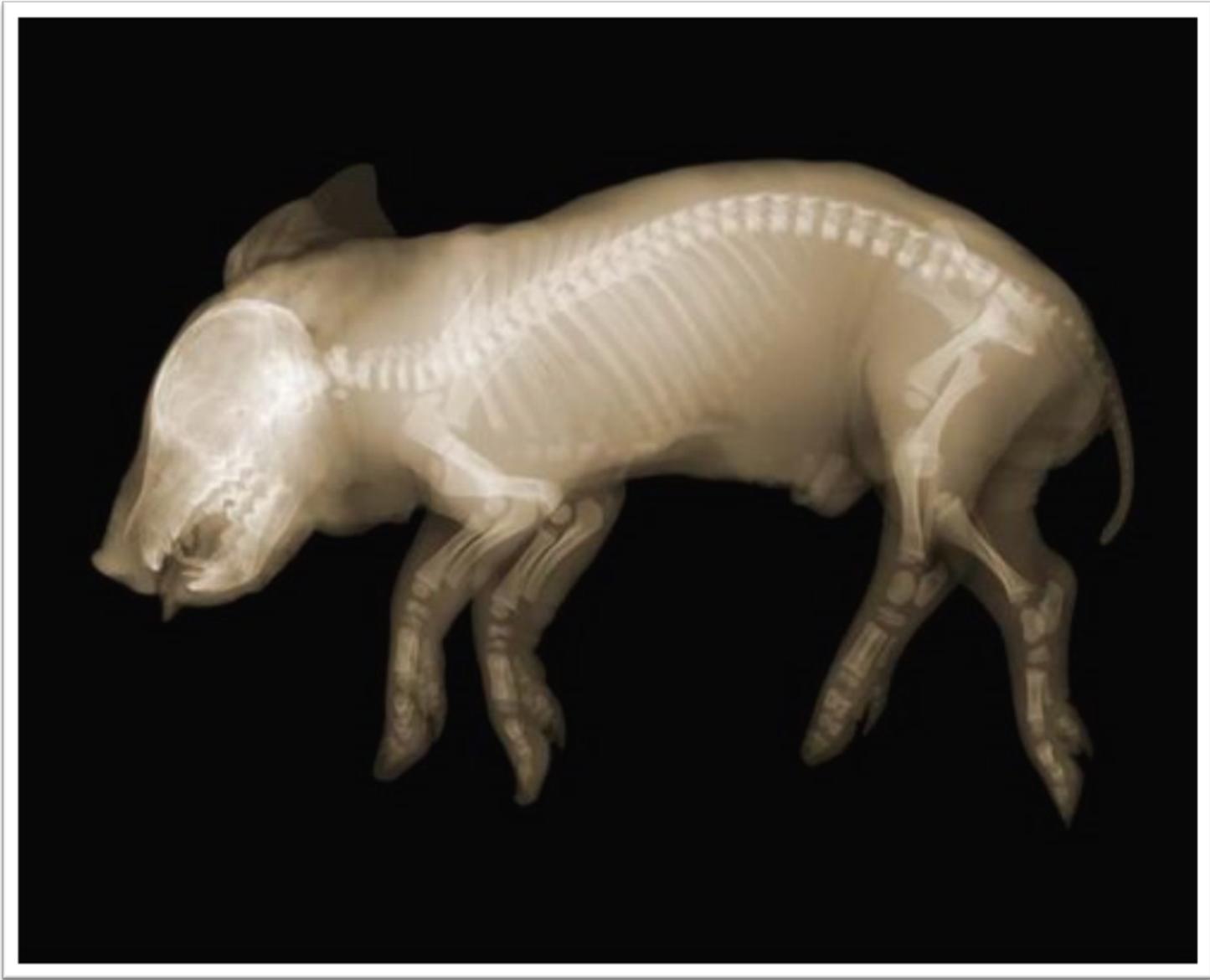
Length: _____

Eyes: clear cloudy

X-rays or other:



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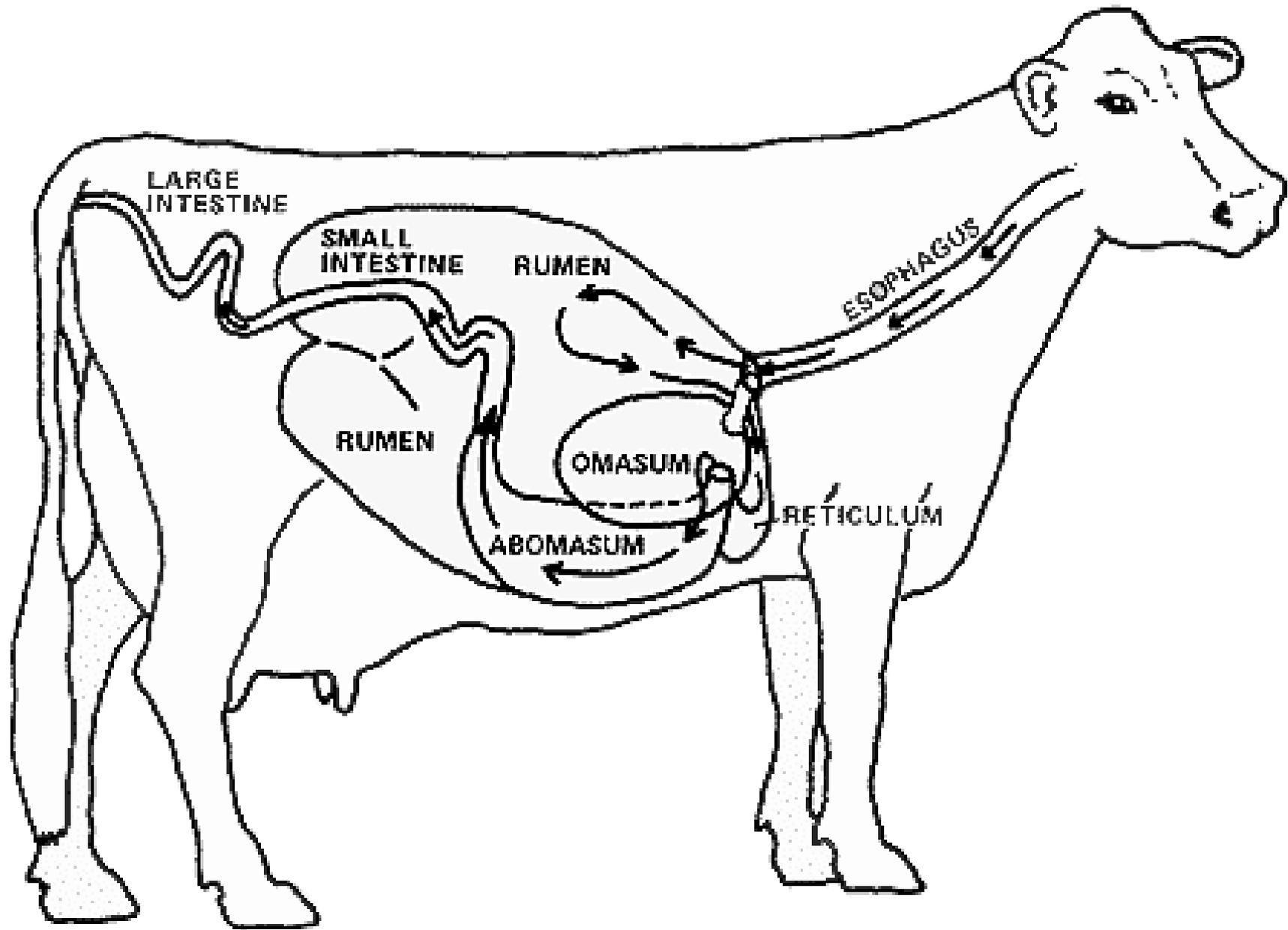
Piglet X-Ray



Horse Hoof X-Ray

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Cow Anatomy



Chicken Anatomy

