

Carl Sandburg Home National Historic Site



Pre-Visit Lesson: *Connemara Farm* *Grades 3-5*

Lesson Length

Approximately one 90 minute lesson or two 45 minute lessons

Common Core State Standards

Reading Standards for Informational Text

- Interpret information presented visually and explain how the information contributes to an understanding of the text in which it appears. CCSS.ELA-Literacy.RI.4.7
- Explain concepts in a scientific text based on specific information in the text. CCSS.ELA-Literacy.RI.4.3

North Carolina Essential Standards

Science

- Understand how structures and systems of organisms (to include the human body) perform functions necessary for life. 5.L.1
- Understand body systems and organs, functions, and their care. 3.L.1



Learning Targets

- I can analyze and discuss information presented on a website.
- I can use a Venn diagram to compare and contrast human and goat digestive systems.

Materials Needed

- Computer and projector or student laptops
- Teacher resource article: *A Comparison Between the Human and Ruminant Digestive System*
- Human and goat digestive graphic charts
- Venn diagram or similar graphic organizer for comparing and contrasting

Procedure

Activating Strategy

KWL – Begin the lesson with a KWL (What I Know, What I Wonder, & What I Learned) graphic organizer on chart paper labeled **Human Digestive System**. Whole group, students will share what they know and what they wonder about the human digestive system. Teacher will record student replies on graphic organizer.

Teaching Strategy

Ideally this lesson will be done utilizing the computer lab or COW (Computers on Wheels) with students working as partners. If this option is not available, lesson can be done whole group with the teacher leading the class through the website.

1. Teacher will distribute the handout labeled connect the Digestive Organ with its Name and Function to students. Students will be encouraged to make the connection of the name of the organ to the function of that organ while viewing the website <http://www.childrensuniversity.manchester.ac.uk/interactives/science/bodyandmedicine/digestivesystem/>. Please note, have students add the following words to the back of the handout: teeth, esophagus, pancreas, rectum, and anus as these are not represented on the handout. Share with students that they must write down the function of these as well.
2. Students use the website below to discover the human digestion function: <http://www.childrensuniversity.manchester.ac.uk/interactives/science/bodyandmedicine/digestivesystem/> and complete the handout.
3. Teacher will ask, “What did you learn from the website?” Allow time for discussion and questions. * This will be a good stopping point if lesson is to be taught in two days.
4. Teacher will distribute second handout, Goat Digestive System, to students. Working with a partner, students will discuss their observations of the handout.
5. Teacher directed, whole class, using a Venn diagram, students will begin to compare and contrast the human digestive system and the goat digestive system.
6. After teacher models how to fill out the graphic organizer using some comparisons and contrasts, students working with a partner will create their own Venn diagram graphic identifying further comparisons and contrasts

Summarizing Strategy

KWL – teacher will review the KWL from the beginning of the lesson. Teacher will ask if there were any misconceptions of what we “thought” we knew about the human digestive system. Teacher will record student comments. Teacher will then ask if any of the “I wonder” statements were answered during the lesson. Teacher will record additional information. Finally, teacher will ask students to identify what they learned. Teacher will record student responses. KWL chart will then be placed on bulletin board as a reference tool for students.

Extension Activity

Have the students work in small groups or individually to write an advertisement that communicates the need for healthy eating for people or goats based on what they have learned about the digestive systems.

Resource

A *Comparison Between the Human and Ruminant Digestive System* by Julie Eden.
Article Source: http://EzineArticles.com/?expert=Julie_Eden

Differences

Ruminants:	Humans:
<ul style="list-style-type: none"> • Mouth is taken to food. Specialized tongue and lip for grasping and tearing. 	<ul style="list-style-type: none"> • Food is taken to mouth by hands, utensils, etc...
<ul style="list-style-type: none"> • Well-developed molars and premolars for grinding, movement is "lateral". A gap between premolars and molars allows the tongue to manipulate the food into small amounts prior to swallowing. 	<ul style="list-style-type: none"> • Incisors and canine produce shearing action, used for cutting food, premolars and molars for grinding and crushing. Upper and lower teeth movement is "vertical".
<ul style="list-style-type: none"> • Protein needs supplied by rumen bacteria. 	<ul style="list-style-type: none"> • Protein is a dietary requirement and is provided by the intake of various foods. Need variety of foods to obtain various other nutrients.
<ul style="list-style-type: none"> • One set of teeth for life, teeth wear flat with age. In most ruminants upper teeth replaced by "Dental Pad". 	<ul style="list-style-type: none"> • Two sets of teeth (childhood and adult). Adult tooth loss through decay and improper nutrition - replaced by dentures (false teeth).
<ul style="list-style-type: none"> • Regurgitation of cud for chewing at rest 	<ul style="list-style-type: none"> • Vomiting more common in carnivores and omnivores. Forceful ejection of gastric contents from the mouth.
<ul style="list-style-type: none"> • Complex digestive system (Four Stomachs). 	<ul style="list-style-type: none"> • Digestive System (one stomach). Ill health, weather changes, irritability and stress, may have an effect on digestive processes.
<ul style="list-style-type: none"> • Herbivores – do not eat meat. 	<ul style="list-style-type: none"> • Omnivores – eat meat and plants.

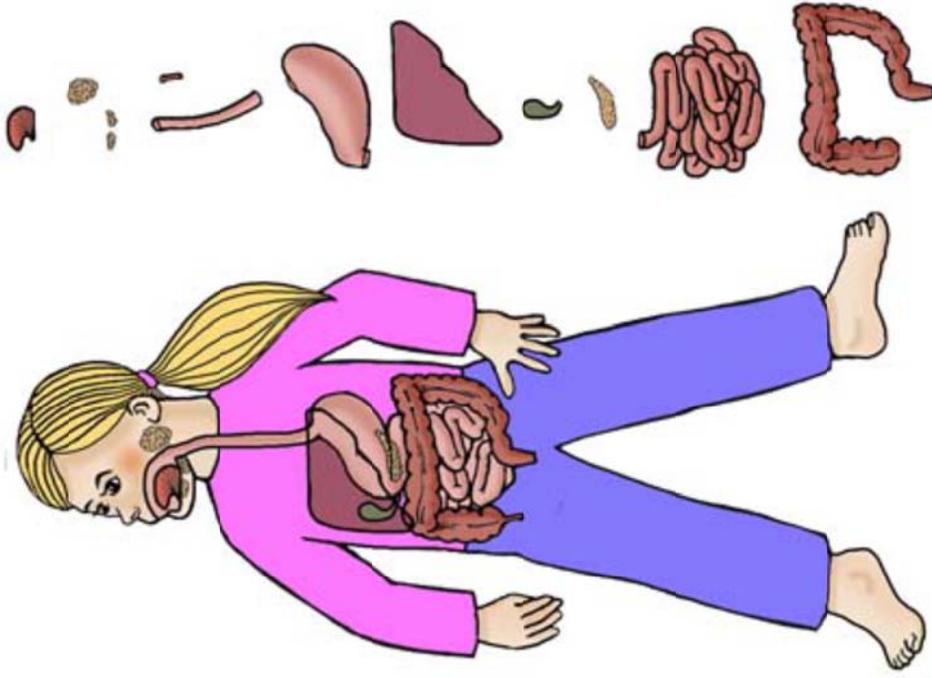
Similarities:

We require food, water, and oxygen to sustain life.

We require similar nutrients.

We produce similar waste products.

Connect the Digestive Organ with its Name and Function



Organs

Organ Names

Organ Functions

Makes & releases juice into small intestine to make food nutrients less acid.

Takes up any left over water, vitamins & electrolytes (like sodium & chloride) in food waste.

Moves the food around in the mouth to help break it down and mix it with saliva.

Long, muscular tube that squeezes food down into the stomach.

Digestion finishes up here & all the nutrients are absorbed into blood.

A storage tank for digesting food by mixing it with powerful acids to kills bacteria & break it down (protein digestion begins).

Makes & releases a chemical that breaks down starchy foods (like bread).

Stores bile made in the liver.

Makes bile to break down fat. cleanses blood & changes nutrients into forms the body can use and store.

appendix

tongue

esophagus

gall bladder

large intestine

liver

pancreas

salivary glands

small intestine

stomach

Goat Digestive System

