



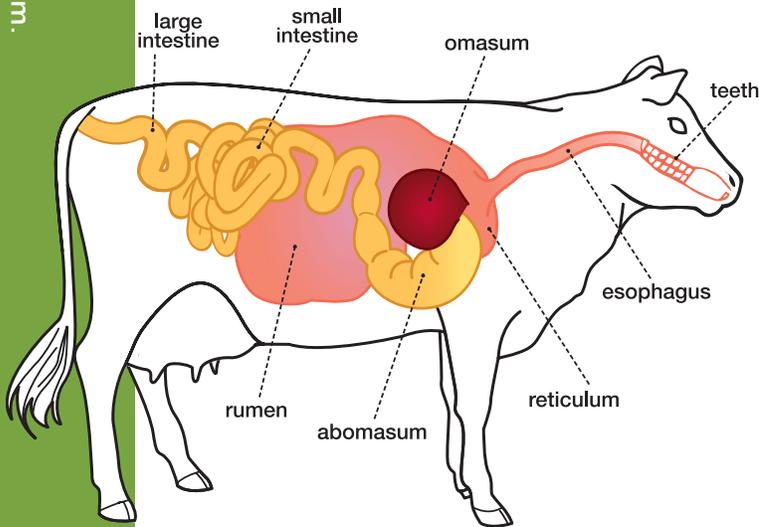
Got Guts?

Investigate the ruminant digestive system.

Activity

There are two basic digestive systems: monogastric and ruminant. Although both systems break down food into smaller components, they have significant differences. A monogastric organism, such as a human, has a simple, single-chambered stomach. Ruminants, such as cattle and deer, have four different chambers in their stomach (rumen, reticulum, omasum, and abomasum), and these chambers have specific functions. Students will explore the ruminant digestive system in this activity.

1. Prior to the lesson, download and print copies of *Animal Appetites*, *Got Guts?* labels, and *Cow Digestive Tract* handouts.
2. Read the story *Animal Appetites* as a class. Solicit student responses to the included questions.
3. Introduce the term “digestive tract” by reviewing the human digestive system. Allow students to identify parts and their related functions.
4. Tell students that they will use modeling materials to construct models of a ruminant digestive system. Give each group the *Cow Digestive Tract*



handout. Distribute the listed materials.

5. Instruct students to create a model of the cow's digestive tract on the foam board using the labels and materials provided.
6. Have students share their models and identify all parts and functions of the ruminant digestive system.

Materials

- *Animal Appetites*, *Got Guts?* labels, and *Cow Digestive Tract* handouts from LearnAboutAg.org/agbites
- Foam board
- Modeling materials: balloons, tubes, hoses, straws, string, rope, empty soft drink bottles, chenille stems, milk jugs, and food containers
- Scissors
- Tape or glue

Tip

Review the human digestive system by viewing a slide show of how the digestive system works at MayoClinic.com.

California Standards

Grade 3

ELA CC: RI.3.1, 7; W.3.7;
SL.3.4; L.3.6
NGSS: 3-LS1-1

Grade 4

ELA CC: RI.4.1, 3, 7; W.4.2, 7;
SL.4.4; L.4.6
NGSS: 4-LS1-1, 7, 4-ETS1.A

Grade 5

ELA CC: RI.5.3, 7; W.5.2, 7; SL.5.4;
L.5.6
NGSS: 5-LS1.C, 5-PS3.D, 5-LS2-1

Classroom Activities

English Language Arts

- Have students write a paragraph explaining how ruminant digestive systems allow them to survive on a diet of plant materials.

Nutrition

- Have groups of students design a healthy meal plan for themselves for one day. Refer to the daily food plan section on the USDA's MyPlate website ChooseMyPlate.gov. Instruct students to research the dietary requirements of a ruminant animal. Each group should make a chart to compare the meal plan they made for themselves with the meal plan for the ruminant animal.