



## SKILLS :

- Learn about the parts of a beef animal's digestive system
- Complete a beef service project
- Improve technology skills
- Identify best meat cuts
- Develop leadership skills
- Increase knowledge regarding careers in the beef industry



**LIFE SKILLS:** Responsibility

# BEEF

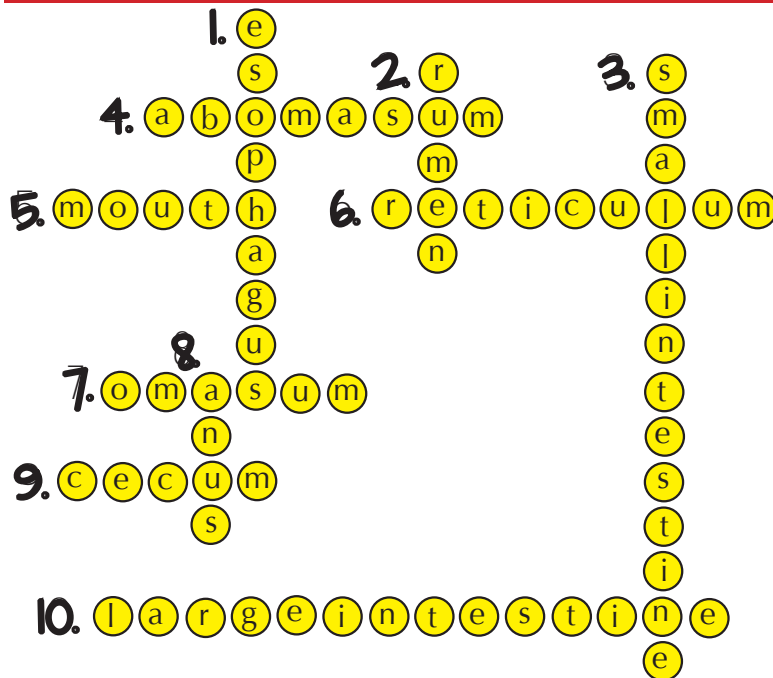
W178-A

The Intermediate Activity Pages introduced you to the origins, basic anatomy and by-products of beef cattle. Use the information in this activity to explore, in more detail, the complex digestive system of ruminants and the quality characteristics used to identify the best cut of meats. These are just a few of the skills that you can learn in the 4-H Beef project. Look at the skills to your left. Check your favorites. Then work with your 4-H leaders and parents to make a 4-H project plan of what you want to learn and do this year.

## DIGESTION DILEMMA

Which part of the digestive tract does what? Unlike the human digestive system, cattle have a very large stomach composed of four parts. The four parts are made up of the abomasum, omasum, reticulum and rumen. Collectively, these four parts help to break down foods that other animals, including humans, are unable to process such as hay.

Read the clues on the right. Select the word that matches the clue from the word list below and write the letters in the appropriate circles.



### DOWN

1. A muscular tube that passes food from the mouth to the stomach.
2. Large "storage area" for food. It also uses bacteria to breakdown large food particles as part of the digestive process.
3. Upper part of the intestinal tract where digestion is completed and nutrients are absorbed into the blood stream. This part of the digestive system consist of the duodenum, jejunum and ileum.
8. A body opening that allows for the removal of solid waste.

### ACROSS

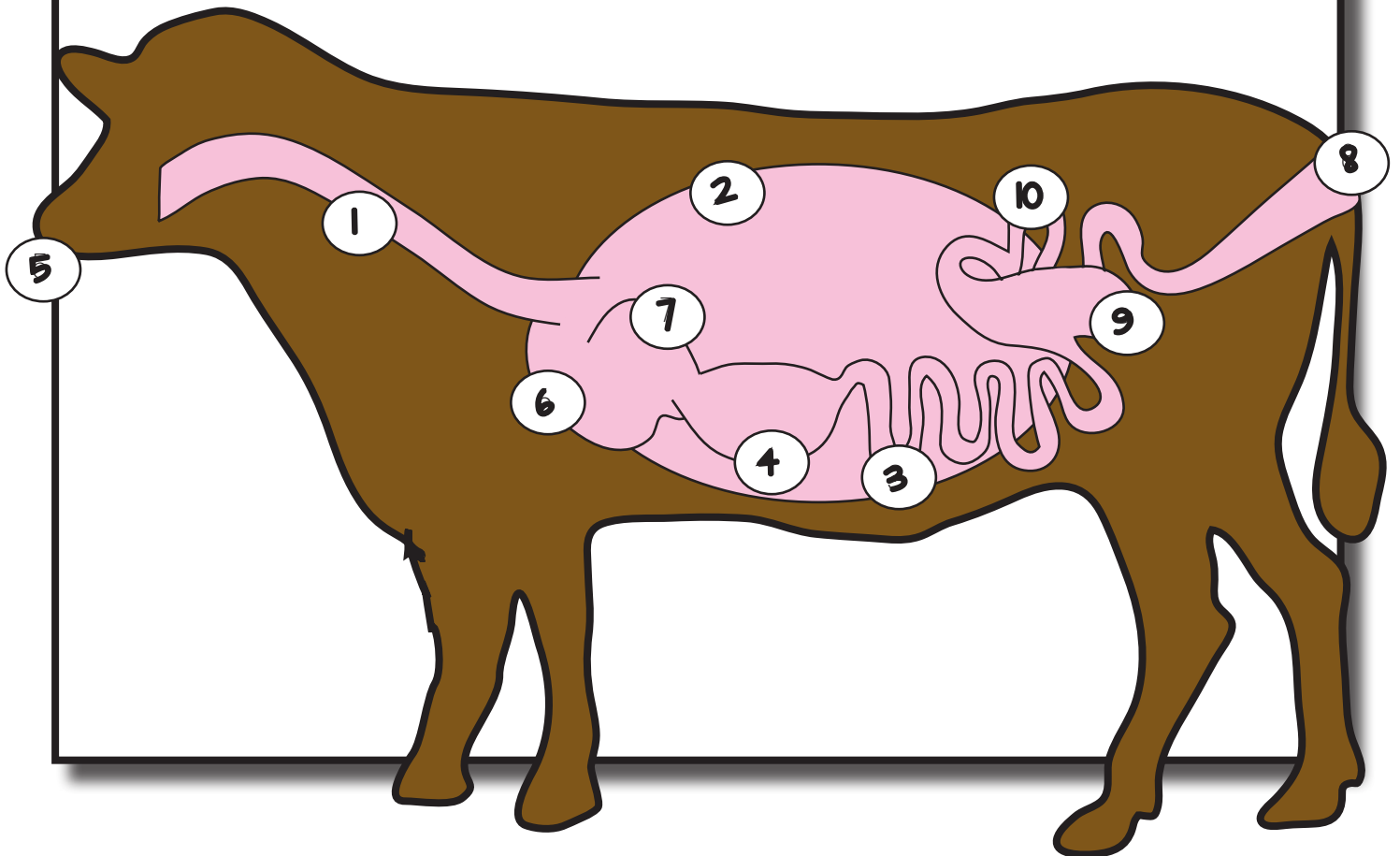
4. One of the four stomachs in ruminants, it is also known as the "true stomach." Its purpose is the secretion of digestive juices such as hydrochloric acid and pepsin to help break down foods.
5. An opening of the body through which an animal takes in food.
6. Another one of the four stomachs in ruminants, this part has "honeycomb" walls. The walls keep materials that could cause damage to the digestive system from passing through. Like the rumen, it also serves as a food storage area and aids in the breakdown of foods.
7. Also part of a ruminant's four stomachs, this part breaks up large food particles and removes the liquid from feed via muscle contractions.
9. The large pouch that forms at the beginning of the large intestine.
10. Made up of the cecum, colon, rectum and anal cavity, this is a part of the intestinal tract.

### WORD LIST

Abomasum	Cecum	Omasum
Anus	Esophagus	Reticulum
	Large Intestine	Rumen
	Mouth	Small Intestine

# INTESTINAL I.D.

Now that you know what each part of a ruminant's digestive system does, can you identify the parts? Using the numbers from the crossword puzzle on page 1, write the number that corresponds to the part of the digestive system in the white circle. An example has been provided.



## ACTIVITIES

- Beef shows
- Skill-a-thons
- Judging teams
- Visit a cattle farm to learn more about raising beef cattle.
- Visit a slaughter house or butcher to learn more about meat processing.
- Visit with a local veterinarian to learn more about animal health care and nutrition.
- Attend a livestock show.
- Enter your beef animal in the fair.

## SERVICE IDEAS

- Conduct a beef project demonstration on one aspect of raising beef animals.
- Give your demonstration to younger students.
- Take your animal to a farm day to teach younger children about beef.
- Create a matching game using the information you gathered in the "Beef Beginnings" game to help project group members learn about beef cattle origins.

## RESOURCES

- School and public libraries
- Beef cattle farmers; breed associations and magazines
- 4-H project leader/group

The following Websites were used to create this activity sheet. To learn more visit:

- [www.utextension.utk.edu/4H/projects/beef.htm](http://www.utextension.utk.edu/4H/projects/beef.htm)
- [www.n4hccs.org](http://www.n4hccs.org)

Don't forget! For more ideas and info, contact your 4-H office.

## QUALITY CUES:

There are numerous qualities and characteristics that are used to decide what is and what is not the best cut of meat. The following is a brief list of characteristics that define a good cut of meat and are used when judging meat products. Rank the four cuts of meat on the left using the characteristics below. Write your ranking on the lines provided. Then explain, based on the characteristics, why you ranked the meat cuts the way that you did.

### CHARACTERISTICS OF GOOD MEAT CUTS

1. More square inches of meat
2. More marbling
3. Deeper red coloring
4. Less fat
5. More evenly distributed marbling

RANK #1: C

REASON: • More square inches of meat than the others  
• More marbling than A/D  
• Deeper red coloring than A  
• Less fat than D  
• More evenly distributed marbling than A/D

RANK #2: B

REASON: • More marbling than A/D  
• Deeper red coloring than A  
• Less fat than D  
• More evenly distributed marbling than A/D  
• But fewer square inches of meat than the others

RANK #3: D

REASON: • More square inches of meat than A/B  
• Deeper red coloring than A  
• But more fat than A, B, and C  
• And less evenly distributed marbling than B/C  
• And less marbling than B/C

RANK #4: A

REASON: • More square inches of meat than B  
• Less fat than D  
• But not as deep red in color than all the others  
• And less evenly distributed marbling than B/C  
• And less marbling than all the others  
• And fewer square inches of meat than C/D

