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Why does that cow have a hole in its stomach?

The hole (fistula) is like a window we can use to learn more about cattle digestion.

Dentists and doctors use tools to help us take care of ourselves.

This steer is helping us to take care of many animals.

Sometimes, we need to be able to see inside in order to be able to help in the development of life-saving treatments for other animals.
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Ruminants have a complex four-compartment stomach.

Ruminant animals are able to digest grass and other plants that humans can not digest.
The stomach includes the rumen or paunch, reticulum or "honeycomb", the omasum or "manyplies", and the abomasum or "true stomach."

- The rumen acts as a storage vat which ferments feed.
- Dense feed drops into the reticulum.
- The omasum absorbs water and other substances.
- Acids and enzymes are secreted into the abomasum (like our human stomach).
There are trillions of bacteria inside a cow’s stomach.

The cow provides the perfect environment for bacteria to breakdown cellulose in plants.

Cows can digest rigid plants cells, converting it to sugars and nutrients for energy.
Ruminating (cud chewing) produces around 40 gallons of saliva which is swallowed and added to the rumen each day.

Saliva provides liquid for the microbial population, recirculates nitrogen and minerals, and buffers the rumen.

Try to visualize how much saliva that is 256 soda bottles!
Plant cells are different than animal cells.

Plant cells have a **cell wall**. Plants need the rigid structure for support like a skeleton to help them grow and stand up.

The cell wall is thick and rigid, similar to a brick wall.
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Photosynthesis is one of the most crucial processes in plant life.

Through the process of photosynthesis, plants grow and provide a source of food for animals and humans.
Cattle occupy two-thirds of Nebraska grazing land, nearly 23 million acres — half is in the Sandhills.

The Nebraska Sandhills provide good grazing land, in an area where crops are not able to be produced.
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Where does Nebraska rank nationally in commercial red meat production?

Answer: Nebraska is ranked 1st in the nation in commercial red meat production

Did you know?
In 2010, 7,144,800,000 lbs. of red meat were produced in Nebraska.

To produce this much beef, Nebraska raises a lot of cattle. If every animal had a seat in Memorial Stadium you could fill it over 125 times!

Count those zeros... That's over 7 billion!
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Ninety-nine percent of every beef animal is used for meat or other products.

Beef by-products are used in industrial, pharmaceutical and household items.

A football, often called a “pigskin” is actually made of cow hide.

The hide and hair from a beef animal weighs 100 pounds.

Other products:
Soaps, shampoos, cosmetics, desserts, film, leather goods, medicine, motor oil.

It takes 3,000 cows to supply the NFL with enough leather for a year’s supply of footballs.
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Feeding and caring for cattle – important to Nebraska’s economy

Every consumer has the right to buy a safe and wholesome food product.

Livestock producers have a responsibility to consumers. Producers care for their livestock by providing:

• Feed
• Water
• Shelter
• Quiet and humane handling
• Preventive medicine
• Medical treatment and care when they are sick

Nebraska’s Beef Quality Assurance (BQA) Program helps assure a safe, high quality product.