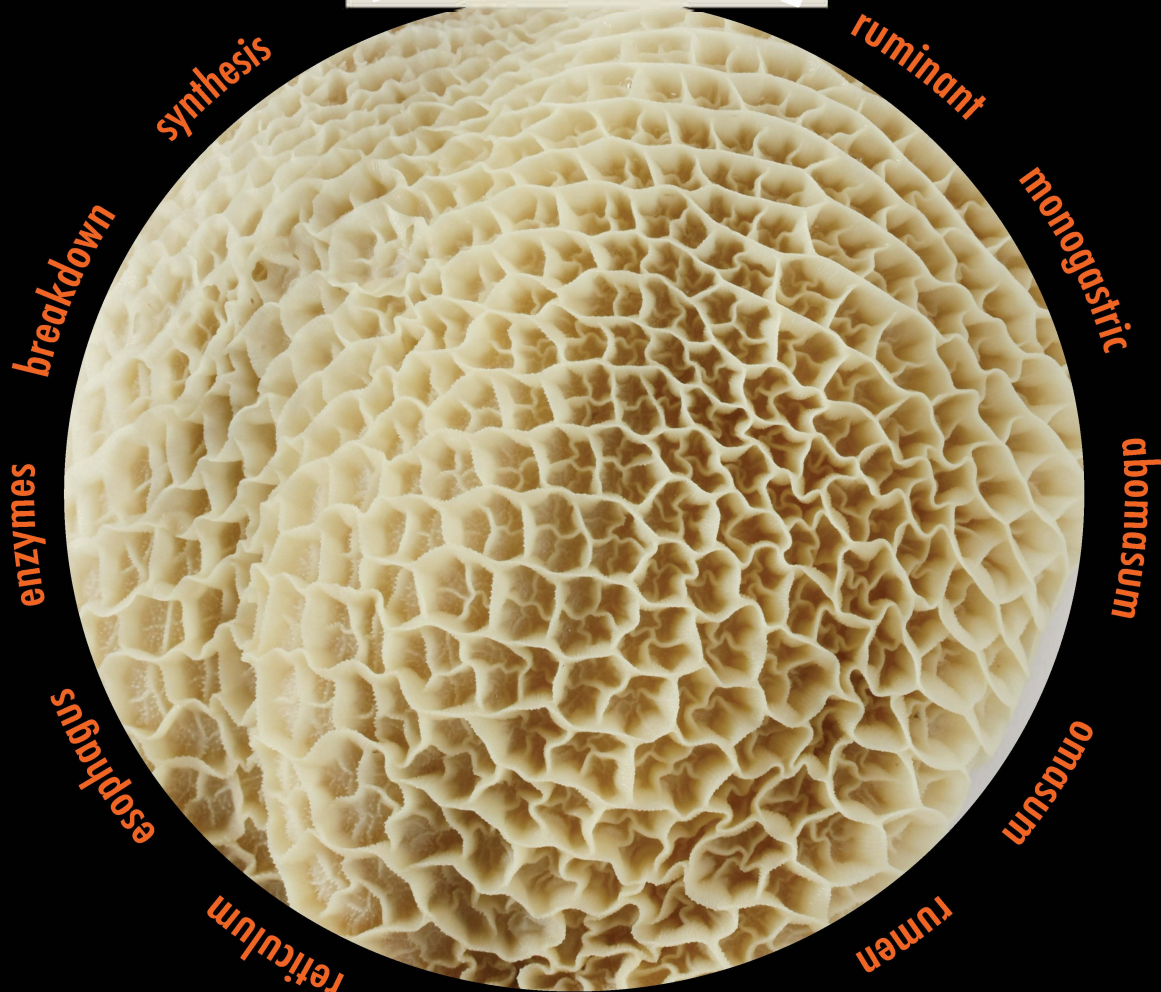


Breakin' it Down in Tummy Town



DIGESTION



enzymes
breakdown
synthesis

ruminant
monogastric
abomasum
omasum
rumen

NUTRITION

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4-H STEM

Digestion

If you held an apple long enough, would your hand be able to soak up all its sugars and nutrients? No way! Your body needs to digest food, or break it down into bits that are small enough to be used by individual cells.

The definition of digestion is the process of breaking down food by mechanical and enzymatic action in the stomach and intestines into substances that can be used by the body. The digestive system performs five major functions:

1. Food intake
2. Storage
3. Digestion
4. Absorption
5. Elimination of waste

These functions take place in the digestive tract. Each feedstuff is broken down into smaller units so it can be utilized by the body, or eliminated from the body. The digestion process prepares food for absorption and use by the animal's body.

There are two main digestive systems in livestock: Ruminant or Monogastric

The main differences between ruminants and monogastrics are monogastrics only have one compartment to their stomach, whereas ruminants have four compartments: rumen, reticulum, omasum, and abomasum.

Check for understanding

- 1) What does the esophagus do?
- 2) Name the four parts of the ruminant stomach.
- 3) What happens to food in the reticulum?
- 4) What is the function of the small intestine?



Experiment

Materials Needed:

- 3 zip-close bags
- 3 slices of bread
- Orange Juice
- Water
- Soda

1. Place one piece of bread into a small zip-close bag. You will have three separate bags for three separate liquids.
2. Add three ounces of specified liquid into zip-close bag with bread. One bag will be filled with orange juice, one bag filled with water, and one bag filled with soda.
3. Record your observations on a separate piece of paper. List the changes found in the orange juice bag, the water bag, and the soda bag.
4. Gently begin squeezing the bread in each bag for thirty seconds to one minute per bag.
5. Record all observations
6. What does the mechanical action of the squeezing represent?
7. How did each liquid react with the bread?
8. How did the bread break down differently in each liquid?
9. Submit your answers via Flipgrid, Microsoft Forms, or on a separate sheet of paper.

