Name: _____ Date: _____

A Cow Eats Her Grass Twice

Circle group

A cow spends much of the day eating grass. She eats in a strange way. She swallows the grass fast with little chewing. Later she lies down to rest. Then she brings the grass back up and chews it again, slowly. The wad she chews is called cud.

The reason is how her stomach works. A cow's stomach has four parts. The first and biggest is the rumen. It is full of tiny microbes. Grass is tough because it has a lot of fiber. People cannot digest that fiber. The microbes in the rumen can break it down. In return, they get a warm home and lots of food.

Chewing cud helps the microbes. Each time the cow grinds the grass, the bits get smaller. The microbes can work on them more easily. The soft food then moves on to the other parts of the stomach. There the cow takes in what she needs.

Animals that eat this way are called ruminants. Sheep, goats and deer are ruminants too. They can turn grass into energy. So farmers can raise them on land where crops do not grow well.

Questions

1. What is cud?

_____

_____

2. How many parts does a cow's stomach have?

_____

_____

3. What lives in the rumen?

_____

_____

4. Why can a cow digest grass when people cannot?

_____

_____

5. How does chewing cud help the microbes?

_____

_____

6. Why do farmers raise ruminants on pastureland?

_____

_____

Words to know

rumen: the first and biggest chamber of a cow's stomach
microbes: living things too small to see without a microscope
fiber: the tough, stringy part of plants
ruminants: animals that chew cud, such as cows and sheep

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

A Cow Eats Her Grass Twice

Triangle group

A cow spends much of the day grazing, and she seems to eat in a strange way. She swallows grass quickly with hardly any chewing. Later, when she lies down to rest, she brings it back up and chews it again, slowly, for a long time. The wad she chews is called cud.

The reason is the way a cow's stomach works. Her stomach has four chambers. The first and largest, called the rumen, holds a huge crowd of tiny microbes. Grass is tough because it is full of fiber that people cannot digest. The microbes in the rumen can break that fiber down, and in return they have a warm home with plenty of food.

Chewing the cud helps the microbes do their job. Each time the cow grinds the grass into smaller bits, there is more surface for the microbes to work on. The softened food then moves along to the other chambers, where the cow takes in the nutrients she needs.

Animals that digest food this way are called ruminants. Sheep, goats and deer are ruminants too. Because they can turn grass into energy, farmers can raise them on pastureland where crops might not grow well.

Questions

1. What is cud?

_____

_____

2. How many chambers does a cow's stomach have?

_____

_____

3. What lives in the rumen?

_____

_____

4. Why can a cow digest grass when people cannot?

_____

_____

5. How does chewing the cud help the microbes?

_____

_____

6. Why do farmers raise ruminants on pastureland?

_____

_____

Words to know

grazing: eating grass that grows in a field
rumen: the first and biggest chamber of a cow's stomach
microbes: living things too small to see without a microscope
fiber: the tough, stringy part of plants
ruminants: animals that chew cud, such as cows and sheep

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

A Cow Eats Her Grass Twice

Square group

A cow devotes a large part of every day to grazing, and she appears to eat in a rather peculiar manner. She swallows grass rapidly with hardly any chewing at all. Later, once she has lain down to rest, she brings the grass back up into her mouth and chews it again, slowly and thoroughly, for a considerable time. The wad that she chews at this stage is called cud.

The reason lies in the way a cow's stomach is built. Her stomach has four separate chambers. The first and largest of these, called the rumen, contains an enormous population of tiny microbes. Grass is tough because it is packed with fiber, which people are unable to digest. The microbes in the rumen, however, can break that fiber down, and in exchange they enjoy a warm home and a steady supply of food.

Chewing the cud assists the microbes in their work. Each time the cow grinds the grass into smaller pieces, there is more surface for the microbes to attack. The softened food then travels onward to the remaining chambers, where the cow absorbs the nutrients she needs.

Animals that digest their food in this fashion are known as ruminants, and sheep, goats and deer belong to the group as well. Because they can convert grass into energy, farmers are able to raise them on pastureland where crops might not grow well.

Questions

1. What is the wad that a cow chews a second time called?

_____

_____

2. How many separate chambers does a cow's stomach have?

_____

_____

3. What does the rumen contain?

_____

_____

4. Why is a cow able to digest grass when people are not?

_____

_____

5. In what way does chewing the cud assist the microbes?

_____

_____

6. Why are farmers able to raise ruminants on pastureland?

_____

_____

Words to know

grazing: eating grass that grows in a field
rumen: the first and biggest chamber of a cow's stomach
microbes: living things too small to see without a microscope
fiber: the tough, stringy part of plants
ruminants: animals that chew cud, such as cows and sheep

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: A Cow Eats Her Grass Twice

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: A Cow Eats Her Grass Twice

Easier · 188 words · Flesch-Kincaid grade 2

1. Grass that a cow has brought back up to chew again.
2. Four.
3. A crowd of tiny microbes.
4. Microbes in her rumen break down the tough fiber.
5. The bits get smaller, so the microbes can work on them more easily.
6. They can turn grass into energy where crops do not grow well.

Triangle: A Cow Eats Her Grass Twice

This passage · 199 words · Flesch-Kincaid grade 4.5

1. Grass that a cow has brought back up to chew again.
2. Four.
3. A huge crowd of tiny microbes.
4. Microbes in her rumen break down the tough fiber.
5. Smaller bits give the microbes more surface to work on.
6. They can turn grass into energy where crops might not grow well.

Square: A Cow Eats Her Grass Twice

Harder · 233 words · Flesch-Kincaid grade 7.4

1. Cud.
2. Four.
3. An enormous population of tiny microbes.
4. Microbes in her rumen can break down the tough fiber.
5. Smaller pieces give the microbes more surface to work on.
6. They can convert grass into energy where crops might not grow well.