

Colorado Reader

Educator Guide to Accompany the Colorado Reader

BEEFIN' UP KNOWLEDGE Discovering Colorado's #1 Agricultural Product

Purpose: Through this Reader, students will be introduced to Colorado's beef industry, exploring the journey of beef from ranch to table. Students will learn about the lifecycle of cattle, the variety of cattle breeds, and the environmental and economic contributions of cattle ranching. Through engaging facts and activities, this Reader provides insights into how beef production connects to sustainability, nutrition, and daily life in Colorado.

Colorado Academic Standards: This cross-curricular educational resource will meet the following standards through the text and various activities. Each activity is designed to align with the relevant grade-level expectations for reading comprehension, science, and social studies

3RD GRADE STANDARDS

Reading, Writing, and Communicating

- Comprehension and Collaboration (3.1.2): Engage in collaborative discussions on topics such as the cattle lifecycle and beef's environmental impact.
- Informational Text Comprehension (3.2.2): Use text features to locate and interpret information about beef breeds and the beef lifecycle.

Science

- Life Science: Organisms and Their Environments (3.2.1): Describe how cattle rely on plants and other animals for survival.

Social Studies

- Economics (3.3.1): Understand the role of producers and consumers through Colorado's beef industry.

4TH GRADE STANDARDS

Reading, Writing, and Communicating

- Research and Inquiry (4.4.1): Conduct short research on cattle breeds or sustainability practices using the Reader as a source.
- Understanding and Using Informational Texts (4.2.2): Identify main ideas in sections on beef production and cattle's role in the environment.

Science

- Life Science: Structure, Function, and Survival (4.2.1): Explore how cattle's adaptations support survival in various environments.

Social Studies

- Geography (4.2.2): Describe how Colorado's environment supports cattle ranching and influences human activity.

5TH GRADE STANDARDS

Reading, Writing, and Communicating

- Summarizing and Paraphrasing (5.2.2): Summarize information about the beef lifecycle and sustainability practices.
- Interpreting Vocabulary (5.2.3): Determine the meaning of domain-specific vocabulary such as "marbled beef," "weaning," and "ruminant."

Science

- Life Science: Matter and Energy in Organisms and Ecosystems (5.2.1): Model the movement of matter among plants, animals, and decomposers through beef cattle's role in nutrient cycling.

Social Studies

- Civics (5.4.2): Analyze how ranchers address environmental issues through sustainable cattle ranching practices.

How to use: Use this *Colorado Reader* during your reading, social studies, or science. Another option is to send these items home with students (or include in homework/enrichment packets) to complete at home on virtual learning days. Or use during substitute days. Pass out one copy of the *Colorado Reader* to each student. Ask students to read the *Colorado Reader*, completing the activities within the *Reader* as they go. Answers to the activities in the *Reader* are included, should you desire to collect and score responses. To further enhance learning, incorporate any of the additional lessons from the Curriculum Matrix that are identified on the back.

Vocabulary: Reviewing these terms will help students better understand the material and enhance their learning experience as they explore the world of Colorado produce and farmers markets.

auction – A public sale where animals or goods are sold to the person willing to pay the most.

backgrounder or stocker – People who care for young beef animals at their stage in life when the animals eat mostly grass after weaning.

beef breeds – Types of cattle raised specifically for meat, like Angus, Hereford, and Charolais.

bull – An intact male beef or dairy animal.

calf – A young cow or bull.

carbon cycle – A natural process where carbon atoms continuously move between the Earth's atmosphere, oceans, living organisms, and soil.

cellulose – A material that makes up the strong parts of plants, which animals like cattle can digest.

cow - A female beef or dairy animal.

crossbreeding – Breeding two different types of cattle to combine their best traits.

export – Goods, like beef, sent from one country to another for sale.

feedlot/feedyard – A place where cattle are fed to grow big and strong before being sold for meat.

forage – Plants like grass or hay that cattle eat.

harvesting facility/packing plant – A place where animals are prepared to be sold as meat for grocery stores and restaurants.

lifecycle – The stages of life a living thing goes through, from birth to adult.

manure – Animal waste, often used to help plants grow as fertilizer.

marbling – Small bits of fat in meat that make it tastier and tender.

methane – A gas produced by animals like cattle during digestion; it's part of the carbon cycle.

nutrient cycle – The process of nutrients moving through plants, animals, and soil to help living things grow.

Pulmonary Arterial Pressure (PAP) – A test to see how well a cow's heart works at high altitudes, especially important in mountain areas.

ruminant – An animal with a special stomach that helps it digest tough plant parts, like grass.

steer - A male bovine that has been castrated.

sustainability – Practices that help protect resources and the environment for the future.

weaning – The process of helping a young animal start eating on its own and not rely on its mother's milk.

Lesson Plans to go with this Reader: The Agricultural Literacy Curriculum Matrix is an online, searchable, and standards-based database for K-12 teachers. The Matrix contextualizes national education standards in science, social studies, and nutritional education with relevant instructional resources linked to Common Core Standards. Below are a few lesson plans that could be used in conjunction with this *Colorado Reader*. Find these lessons and more by searching the key words on the Curriculum Matrix at CoAgClassroom.org.

Animals on the Farm - Students discover that farm animals produce different types of products. Grades PreK-K

Milk or Meat? Beef or Dairy? - Students identify the differences between beef and dairy cattle and determine the commodities produced by each type of cattle. Grades K-2

Beef Basics - Students explain the value of the beef cattle industry, including the products cattle produce, the production process from farm to plate, and how cattle can utilize and obtain energy from grass and other forage. Grades 3-5

Build-a-Calf Workshop - Students explore concepts of heredity in beef cattle and identify dominant and recessive traits. Grades 3-5

The Remarkable Ruminant - In this lesson, students will follow the farm to fork process of producing beef, learn how cattle and other ruminants convert grass into nutrient-rich foods such as milk and meat, discover ways cattle recycle food waste, and identify careers in the beef cattle industry. Grades 6-8

Source Sleuth: Investigating Credible Sources About Beef Students will discover why it is important to use credible sources, learn strategies for identifying credible sources, identify primary sources of information, and practice citing sources. Grades 6-8

Carbon Hoofprints: Cows and Climate Change - Students explore the carbon cycle and evaluate the carbon footprint of cattle. Using critical thinking skills, students will use the Claim, Evidence, and Reasoning model to determine the effect of cows' methane production on the environment and investigate the extent cattle contribute to climate change. Grades 9-12

Answers:

Page 2: Popular Beef Breeds - Answers are listed on the back page of the Reader.

Page 3: Beef Breeds - Test Your Knowledge

1. Shorthorn; 2. Shorthorn; 3. Angus and Red Angus; 4. Hump over the shoulders, thin skin, or large, floppy ears; 5. Four; 6. Four

Page 7: Sustainability on the Ranch Word Search

T	M	Z	A	X	F	F	Q	C	X	H	U	K	M	Y	R	Y	Q	T	V
H	Q	Y	W	G	C	R	O	L	D	S	N	T	K	M	E	A	L	S	W
L	J	W	R	U	M	D	Z	Z	M	K	M	K	D	H	N	H	O	V	M
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