

Beef Logic Puzzle



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. Mathematical Practices (MP): Problem solving, reasoning and proof, communication, representation, and connections; adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.

Second Grade: 2.MP.1

Third Grade: 3.MP.1

Fourth Grade: 4.MP.1

Fifth Grade: 5.MP.1

Sixth Grade: 6.MP.1

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objectives:

1. Locate information from a chart.
2. Use logical thinking to answer questions.

Materials needed:

- ✓ Math Lesson 1 Student Worksheet – Beef logic Puzzle

Terms:

- *Produced* - create: grow: cultivate by growing

Interest Approach: Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and students situations. Possible interest approaches are listed in the interests approach section of this guide.

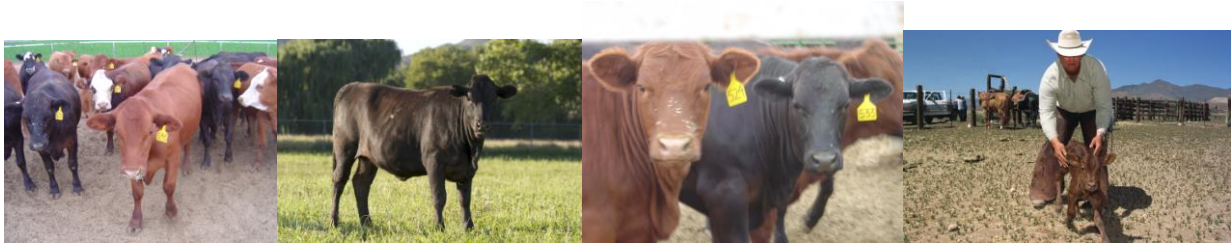
Teaching Strategies: Instruct the students to apply logical thinking to solve a puzzle. Have the students complete **Math Lesson 1 Student Worksheet- Beef Logic Puzzle**.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheets to reinforce the concepts of the lesson. Classroom discussion of the objectives and student questions will assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

Beef Riddle



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. Mathematical Practices (MP): Problem solving, reasoning and proof, communication, representation, and connections; adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.

2. Operations and Algebraic Thinking (OA): Understand and apply properties of operations and the relationship between addition and subtraction; represent and solve problems involving multiplication and division; solve problems involving the four operations, and identify and explain patterns in arithmetic; gain familiarity with factors and multiples; generate and analyze patterns; write and interpret numerical expressions; and understand ratio concepts and use ratio reasoning to solve problems.

3. Number System (NS): Apply and extend previous understandings of multiplication and division to divide fractions by fractions; compute fluently with multi-digit numbers and find common factors and multiples; and apply and extend previous understandings of numbers to the system of rational numbers.

4. Number and Operations in Base Ten (NBT): Understand place value; extend counting sequences; use place value understanding and properties of operations to perform multi-digit arithmetic; and perform operations with multi-digit whole numbers and with decimals to hundredths.

First Grade:	1.OA.6, 1.MP.2, 1.MP.7, 1.MP.8
Second Grade:	2.OA.2, 2.MP.2, 2.MP.7, 2.MP.8
Third Grade:	3.OA.3, 3.NBT.2, 3.MP.2, 3.MP.7, 3.MP.8
Fourth Grade:	4.NBT.4, 4.NBT.6, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.7, 4.MP.8
Fifth Grade:	5.NBT.5, 5.NBT.6, 5.MP.2, 5.MP.7, 5.MP.8
Sixth Grade:	6.NS.2, 6.MP.2, 6.MP.7, 6.MP.8

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objectives:

1. Demonstrate computation skills to answer problems.

Materials needed:

- ✓ Math Lesson 2 Student Worksheet –Beef Riddle

Terms:

1. No specific terms were identified for this lesson.

Interest Approach: Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. Possible interest approaches are listed in the interest approach section of this guide.

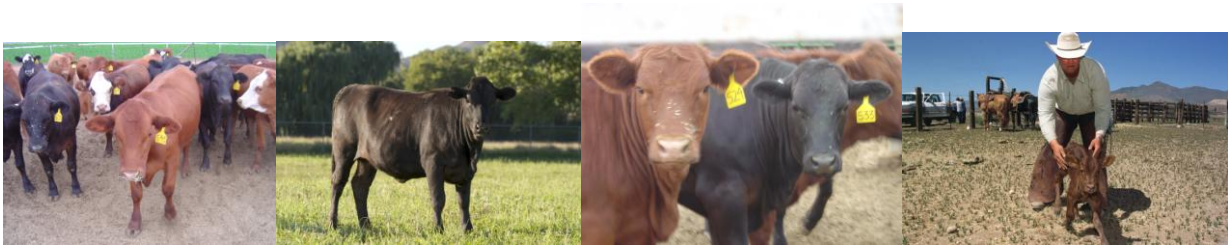
Teaching Strategies: Have the students complete *Math Lesson #2 Student Worksheet – Beef Riddle*.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce the concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the

Cattle Word Problems



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. Mathematical Practices (MP): Problem solving, reasoning and proof, communication, representation, and connections; adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.

2. Operations and Algebraic Thinking (OA): Understand and apply properties of operations and the relationship between addition and subtraction; represent and solve problems involving multiplication and division; solve problems involving the four operations, and identify and explain patterns in arithmetic; gain familiarity with factors and multiples; generate and analyze patterns; write and interpret numerical expressions; and understand ratio concepts and use ratio reasoning to solve problems.

First Grade:	1.OA.A, 1.MP.1, 1.MP.2, 1.MP.3, 1.MP.4, 1.MP.5, 1.MP.8
Second Grade:	2.OA.1, 2.MP.1, 2.MP.3, 2.MP.4, 2.MP.5, 2.MP.8
Third Grade:	3.OA.3, 3.MP.1, 3.MP.4, 3.MP.7
Fourth Grade:	4.OA.4, 4.MP.2, 4.MP.7
Fifth Grade:	5.MP.1
Sixth Grade:	6.MP.1

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objectives:

1. Students will use grade level appropriate operations to solve word problems.

Materials needed: Math Lesson 3 Student Worksheet – Cattle Word Problems

Terms:

Bull- a father bovine

Calves- the young of cattle; baby cow

Employee- A person who works for another person or company

Heifers- a female bovine that has not yet had a calf

Market- the customer (purchaser) of a particular product or service

Teaching Strategies: Have the students complete Word Problems Worksheet.

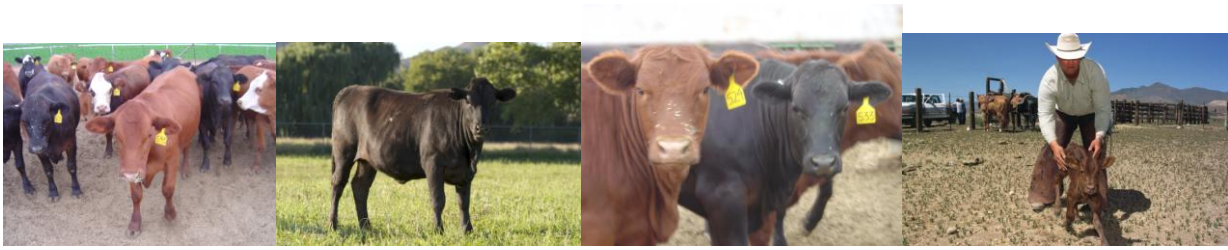
Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with the lesson. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce the concept of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus on the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess the student achievement of the objectives. The post-test will evaluate students' gained knowledge

When is a Cow More Than a Cow

(Taken from AZ Beef Council)



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. Operations and Algebraic Thinking (OA): Understand and apply properties of operations and the relationship between addition and subtraction; represent and solve problems involving multiplication and division; solve problems involving the four operations, and identify and explain patterns in arithmetic; gain familiarity with factors and multiples; generate and analyze patterns; write and interpret numerical expressions; and understand ratio concepts and use ratio reasoning to solve problems.

2. Number and Operations in Base Ten (NBT): Understand place value; extend counting sequences; use place value understanding and properties of operations to perform multi-digit arithmetic; and perform operations with multi-digit whole numbers and with decimals to hundredths.

3. Mathematical Practices (MP): Problem solving, reasoning and proof, communication, representation, and connections; adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.

4. The Number System (NS): Apply and extend previous understandings of multiplication and division to divide fractions by fractions, compute fluently with multi-digit numbers and find common factors and multiples, and apply and extend previous understandings of numbers to the system of rational numbers.

Third Grade: 3.OA.7,3.NBT.2,3.MP.2,3.MP.7,3.MP.8

Fourth Grade: 4.NBT.4, 4.NBT.7,4.MP.2, 4.MP.7, 4.MP.8

Fifth Grade: 5.NBT.5, 5.NBT.6, 5.MP.2,5.MP.6,5.MP.7, 5.MP.8

Sixth Grade: 6.NS.2, 6.MP.2, 6.MP.7, 6.MP.8

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objectives:

1. Demonstrate computation skills to answer problems.
2. Understand and apply numerical operations.

Materials needed:

- ✓ Math Lesson 4 Student Worksheet –When is a Cow More Than a Cow

Terms:

No specific terms were identified for this lesson.

Interest Approach: Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. Possible interest approaches are listed in the interest approach section of this guide.

Teaching Strategies: Have the students complete *Math Lesson #4 Student Worksheet – When is a Cow More Than A Cow?*

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce the concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

A Hundred Bales of Hay

(Derived from Oklahoma Ag in the Classroom)



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. **Number and Operations in Base Ten (NBT):** Understand place value; extend counting sequences; use place value understanding and properties of operations to perform multi-digit arithmetic; and perform operations with multi-digit whole numbers and with decimals to hundredths.

2. **Mathematical Practices (MP):** Problem solving, reasoning and proof, communication, representation, and connections; adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.

Kindergarten:	K.NBT.1, K.MP.1, K.MP.2, K.MP.4, K.MP.7, K.MP.8
First Grade:	1.NBT.1, 1.NBT.2, 1.MP.2, 1.MP.7, 1.MP.8
Second Grade:	2.NBT.2, 2.MP.2, 2.MP.7, 2.MP.8

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objectives:

1. Identify whole numbers
2. Demonstrate knowledge of vertical, horizontal, and diagonal patterns
3. Identify and state verbally whole numbers as ones and tens

Materials needed:

- ✓ Math Lesson 5 Student Worksheet –A Hundred Bales of Hay

Terms:

No specific terms were identified for this lesson.

Interest Approach: Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. Possible interest approaches are listed in the interest approach section of this guide.

Teaching Strategies: Have the students complete cut out the graphics and separate into piles. Read the different instructions allowed. Clear off the board between each instruction.

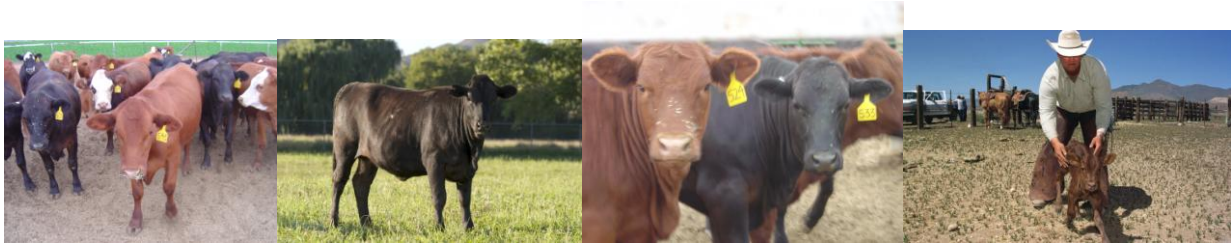
Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce the concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

Barbed Wire

(Derived from Oklahoma Ag in the Classroom)



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

- 1. Mathematical Practices (MP):** Problem solving, reasoning and proof, communication, representation, and connections; adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.
- 2. Geometry (G):** Identify and describe shapes; analyze, compare, create, and compose shapes; reason shapes and their attributes; draw and identify lines and angles, and classify shapes by properties of their lines and angles; graph points on the coordinate plane to solve real-world and mathematical problems; classify two-dimensional figures into categories based on their properties; and solve real-world and mathematical problems involving area, surface area, and volume.

Fourth Grade: 4.G.1, 4.MP.5, 4.MP.6

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

- ✓ Identify changes in the beef industry
- ✓ Learn about the development of barbed wire and its impact on the development of the West.
- ✓ Draw points, lines, line segments and rays.

Materials Needed:

- ✓ Assorted Barbed Wire
- ✓ Handout Social Studies #1- Don't Fence Me In-Barbed Wire

Terms:

Barbed Wire- Twisted strands of fence wire having sharp barbs at regular intervals

Corral- An enclosure for confining livestock

Frontier- The margin between the occupied land and the wilderness in the settlement of the United States.

Herd- A group of cattle or domestic animals of a single kind that are kept together for a specific use.

Homestead- Land claimed by a settler or squatter, especially under the Homestead Act

Line- a geometric figure extending in a fixed direction without an ending point.

Line Segment- A continuous mark between points

Patent- A grant made by a government that confers upon the creator of an invention the sole right to make, use, and sell that invention for a set period of time.

Point- A dimensionless geometric object having no properties except location.

Ray- A straight line extending from a set point and extending in a fixed direction without an ending point.

Stampede- A sudden headlong rush of startled animals

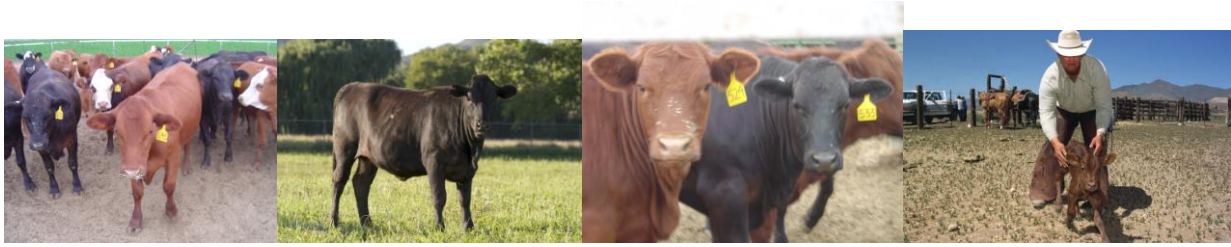
Teaching Strategies: Go over the background information with your students. Hand out Student Worksheet Don't Fence Me In and read as a class, in groups, or individually. Have students answer questions regarding the paragraph.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

Show What you know



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. **Reading Standards: Foundational Skills (RF):** Students will demonstrate an understanding and working knowledge of concepts of print, the alphabetic principle, and other basic conventions of the English writing system.
2. **Reading Standards for Literature (RL):** Students gain adequate exposure to a range of texts and tasks.

First Grade:	1.RF.4, 1.RL.1
Second Grade:	2.RF.4, 2.RL.1
Third Grade:	3.RF.4, 3.RL.1
Fourth Grade:	4.RF.4, 4.RL.1
Fifth Grade:	5.RF.4, 5.RL.1
Sixth Grade:	6.RF.4, 6.RL.1

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

1. Identify cattle's importance to people.
2. Identify cattle terms.
3. Students will use reading strategies to identify information found in the text to answer questions.

Materials Needed:

- ✓ American Farm Bureau Beef AgMag
- ✓ www.agintheclassroom.org
- ✓ English Language arts Lesson 2 Students worksheet –pre and post test for each child.

Terms

- **Heifer** – young female from the time she is born to just before she has had a calf
- **Cow** – female after she has had a calf
- **Bull** – male
- **Steer** – neutered male
- **Polled-** without horns

- **Feedlot-** a fenced-in area where cattle are fed concentrated feed for the last 300-400 pounds of their growth.
- **Cud-** cattle graze or eat quickly and then bring up a small amount of food to chew into very tiny pieces. They spend many hours chewing this food, which is the cud.
- **Cloven Hooves-** hooves split in the center or a two-toed hoof
- **Wean-** process of removing a mammal from nursing on milk

Teaching Strategies: Have the students complete ELA Lesson 2 Student Worksheet to ascertain their knowledge of beef cattle.

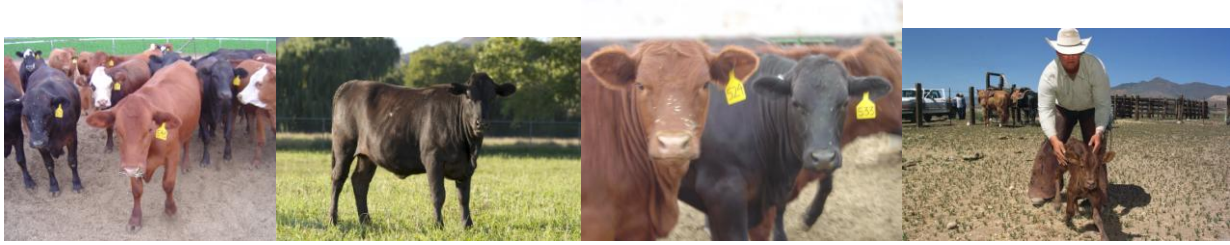
After the worksheet is graded, students will read the Beef AgMag to help them answer the remaining questions.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with the lesson. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce the concept of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus on the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess the student achievement of the objectives. The post-test will evaluate students' gained knowledge.

The Hamburger Paragraph



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

- 1. Language (L):** Student will demonstrate an understanding in; conventions of Standard English, knowledge of language, and vocabulary acquisition and use.
- 2. Writing (W):** Students should demonstrate an understanding in all aspects of language use; text types and purpose, production and distribution of writing, research to build and present knowledge, and range of writing.

First Grade: 1.L.2, 1.W.2

Second Grade: 2.L.2, 2.W.2

Third Grade: 3.L.2, 3.W.2

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

- 1.** Show knowledge of the parts of a paragraph

Materials Needed:

- ✓ ELA Lesson 2 Student Worksheet

Terms:

No specific terms were identified for this lesson.

Teaching Strategies: Engage students in conversation about hamburgers. How many of you like to eat hamburgers? What toppings do you like on your hamburger? Why do we put toppings on our hamburgers? Suggest to students that a paragraph is like a hamburger using the hamburger recipe....

Top Bun: Introduction- Every hamburger needs a top bun, every paragraph needs an introduction.

Hamburger Patty: The Topic Sentence- The most important part. You cannot have a burger or a paragraph without it.

The Fixings: Supporting Details- Supporting details describe the topic sentence. They make the paragraph more interesting to read, just as ketchup, mustard, and pickles make a hamburger more interesting to eat.

Bottom Bun: Conclusion- A conclusion finishes off the paragraph and leaves you with a final thought or idea. A paragraph is unfinished without a good conclusion, just as a hamburger without a bottom bun. Your burger would fall apart and so would your paragraph.

After reviewing the Hamburger Recipe have the students use the *ELA Lesson 2 Student Worksheet- Hamburger Paragraph* and have your students write a paragraph. Potential topics could include... Where my food comes from? What is a rancher and what do they do for me? My favorite hamburger experience, etc.

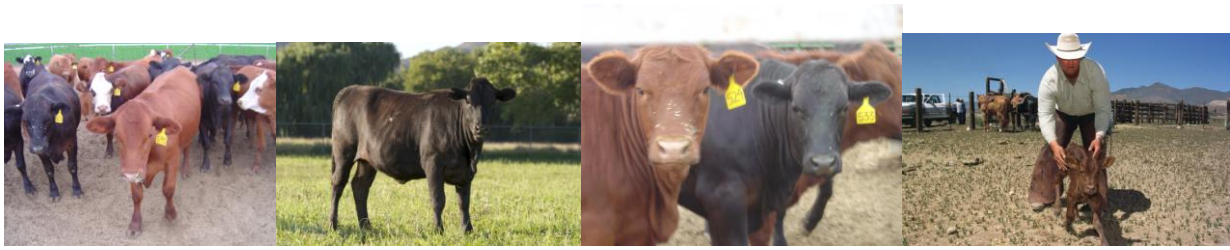
Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

Build a Burger

(Taken from Oklahoma Ag in the Classroom)



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. Reading Standards for Informational Text (RI): Students will gain adequate exposure to a range of texts and tasks and demonstrate an understanding in: key ideas and detail, craft and structure, integration of knowledge and ideas, range of reading and level to text complexity.

First Grade:	1.RI.1
Second Grade:	2.RI.1
Third Grade:	3.RI.1
Fourth Grade:	4.RI.1

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

1. Recognize and name products used to build a hamburger

Materials Needed:

- ✓ ELA Lesson 3 Student Worksheet- Build a Burger

Terms:

No specific terms were identified for this lesson.

Teaching Strategies: Read the background information to your students. Hand out Student Worksheet A and have students match the clues to the products used in making hamburgers. Hand out student Worksheet B and have students match the burger parts to the picture parts.

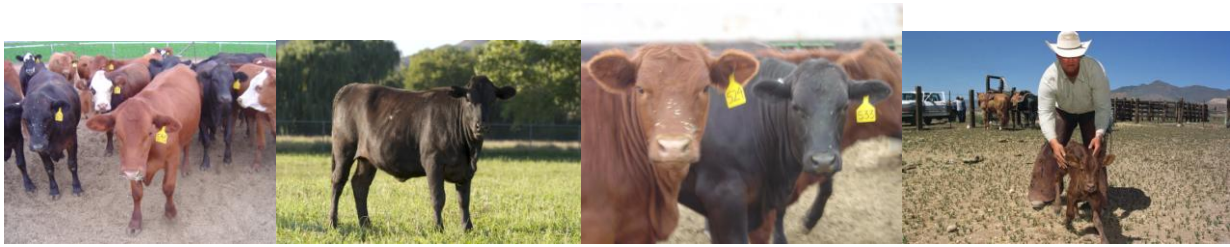
Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

Dairy or Beef?

(Derived from Oklahoma Ag in the Classroom)



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. **Speaking and Listening Standards (SL):** Students will demonstrate an understanding in; comprehension and collaboration, and presentation of knowledge and ideas

First Grade: 1.SL.1

Second Grade: 2.SL.1

Third Grade: 3.SL.1

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

1. Identify topic of expository heard
2. Answer questions from text heard
3. Understand the difference between beef and dairy cows

Materials Needed:

- ✓ ELA Lesson 4 Student Worksheet – Dairy of Beef?

Terms:

Beef Cattle- a cow used mainly for the production of beef

Dairy Cow- a cow used mainly for milk production

Teaching Strategies: Read background to your students. Have students complete ven diagram to show what they know about beef and dairy cows. Have students put together their booklet. Color if appropriate.

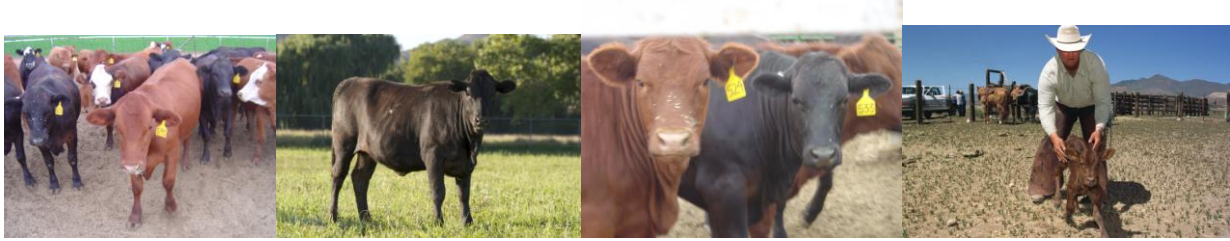
Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

By-products Bingo

(Taken from Illinois Ag in the Classroom)



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

- 1. Speaking and Listening Standards (SL):** Students will demonstrate an understanding in; comprehension and collaboration, and presentation of knowledge and ideas

First Grade: 1.SL.1

Second Grade: 2.SL.1

Third Grade: 3.SL.1

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

- ✓ Learn beef by-products while playing Bingo
- ✓ Show an understanding of “vertical,” “horizontal,” and “diagonal” while playing Bingo.

Materials Needed:

- ✓ ELA Lesson 5 Student Worksheet – Bingo Card
- ✓ ELA Lesson 5 Student Worksheet – By-Product pieces

Terms:

By-product – a secondary result or product, not main reason why the animal is raised

Gelatin- a colorless, odorless and flavorless mixture of proteins from animal bones

Teaching Strategies: Read the background information to your students. Show students some of the by-products from the Cattle Kit. Hand out Student Worksheet Bingo Card and By-product Pieces. Have students cut out by-product pieces and select 24 and paste onto their bingo card. Hand out pasta shells to students to use as place markers. When students are ready, teacher pulls pieces from bag and calls out the by-product to the students. Continue as Bingo is played.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

What's Your Brand

(Taken from Oklahoma Ag in the Classroom)



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. **Reading Standards for Literature (RL):** Students gain adequate exposure to a range of texts and tasks.
2. **Reading Standards for Informational Text (RI):** Students will gain adequate exposure to a range of texts and tasks and demonstrate and understanding in: key ideas and detail, craft and structure, integration of knowledge and ideas, range of reading and level to text complexity.

Third Grade: 3.RL.1, 3.RI.3

Fourth Grade: 4.RL.1, 4.RI.3

Fifth Grade: 5.RL.1, 5.RI.3

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

- ✓ Demonstrate a understanding of the history and purpose of branding cattle
- ✓ Interpret brands and identify ranch names

Materials Needed:

- ✓ ELA Lesson 6 Student Worksheet – What is Your Brand A
- ✓ ELA Lesson 6 Student Worksheet – What is Your Brand B
- ✓ ELA Lesson 6 Student Worksheet – What is Your Brand C

Terms:

Brand- A mark indicating identify or ownership, burned, tattooed, or painted on an animal's hide or skin.

Caballero- A Spanish gentleman skilled in riding and managing horses, precursors of American cowboys.

Livestock- Domestic animals, such as cattle or horses, raised for home use or for profit, especially on a farm or ranch.

Maverick- A unbranded or orphaned range cow or colt, traditionally considered the

property of the person who brands it; a horse or steer that has escaped from the herd.

Teaching Strategies: Read the background information to your students. Have students complete the student worksheets. Students can also make their own brands out of pipe cleaners and dip them in tempera paint. Teachers may want to hang an oversized cow sketch in the classroom and let students put their brand on the class cow.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

Punctuation and Capitalization

(Taken from Cattlemen's Beef in Brief)



Common Core State Standards: This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. **Language (L):** Student will demonstrate an understanding in; conventions of Standard English, knowledge of language, and vocabulary acquisition and use.

Third Grade:	3.L.2
Fourth Grade:	4.L.2
Fifth Grade:	5.L.2
Sixth Grade:	6.L.2

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

- ✓ Demonstrate a understanding of the history and purpose of branding cattle
- ✓ Demonstrate a understanding of Conventions- punctuation, capitalization, and use of tense.

Materials Needed:

- ✓ ELA Lesson 7 Student Worksheet – Punctuate This
- ✓ ELA Lesson 7 Student Worksheet – Capital Idea
- ✓ ELA Lesson 7 Student Worksheet – Living in Tense

Terms:

No terms were identified for this lesson

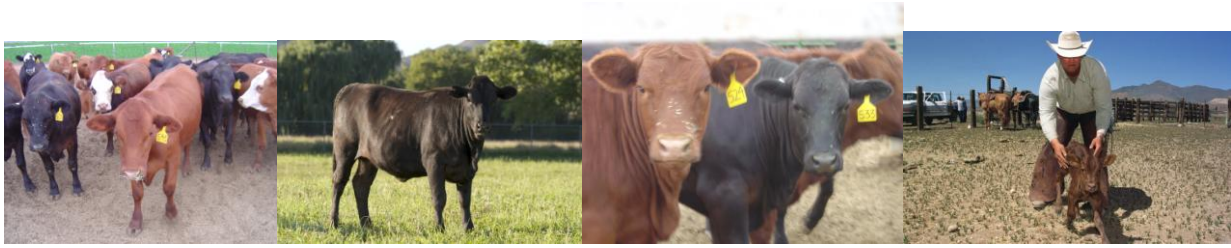
Teaching Strategies: Go over corresponding information sheets for each lesson located in Beef in Brief with your students. Have student's complete student worksheets.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

Economic Importance of Beef (Provided by American Farm Bureau)



Arizona State Learning Standards. This lesson is correlated to the following State Learning Standard.

1. Research Skills For History- students use a variety of resources to find information.

Arizona State Objectives: This lesson addresses the following objectives: (Strand, Concept, Performance objective)

Fourth Grade: 2.1.3

Fifth Grade: 2.1.4

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

- ✓ Describe how beef cattle are important to our economy and their daily life

Materials Needed:

- ✓ Arizona County Map Worksheet
- ✓ Student Handout Economic Importance of Beef
- ✓ 2009 AZ Agricultural Statistics Bulletin

Terms:

No terms were identified for this lesson

Teaching Strategies: Go over the background information with your students. Hand out Student Worksheet *Economic Importance of Beef*. Have the students work in groups and use the 2008 Arizona Ag Statistic Bulletin that is included in the kit to find the answers (pages 31-45). Or go online to USDA Website for the National Agricultural Statistics Service www.usda.gov/nass/pubs/stathigh/2003/tables/economics.htm. Have students identify which counties have beef cattle or dairy cattle. Have students create a key to distinguish between beef and dairy cattle. Students can also visit the Arizona Department of Agriculture website at <http://www.azda.gov/> to find the breakdown of cattle numbers by county.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which

objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

Don't Fence Me In (Taken from Oklahoma Ag in the Classroom)



Arizona State Learning Standards. This lesson is correlated to the following State Learning Standard.

1. Geography- a way of studying human and natural features within a spatial perspective.

Arizona State Objectives: This lesson addresses the following objectives: (Strand, Concept, Performance objective)

Third Grade:	4.5.1
Fourth Grade:	4.5.3, 4.4.5
Fifth Grade:	4.5
Sixth Grade:	4.5

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

- ✓ Identify changes in the beef industry
- ✓ Learn about the development of barbed wire and its impact on the development of the West.

Materials Needed:

- ✓ Assorted Barbed Wire
- ✓ Handout Social Studies Lesson 1- Don't Fence Me In

Terms:

Barbed Wire- Twisted strands of fence wire having sharp barbs at regular intervals

Corral- An enclosure for confining livestock

Frontier- The margin between the occupied land and the wilderness in the settlement of the United States.

Herd- A group of cattle or domestic animals of a single kind that are kept together for a specific use.

Homestead- Land claimed by a settler or squatter, especially under the Homestead Act

Line- a geometric figure extending in a fixed direction without an ending point.

Line Segment- A continuous mark between points

Patent- A grant made by a government that confers upon the creator of an invention the sole right to make, use, and sell that invention for a set period of time.

Point- A dimensionless geometric object having no properties except location.

Ray- A straight line extending from a set point and extending in a fixed direction without an ending point.

Stampede- A sudden headlong rush of startled animals

Teaching Strategies: Go over the background information with your students. Hand out Student Worksheet Don't Fence Me In and read as a class, in groups, or individually. Have students answer questions regarding the paragraph.

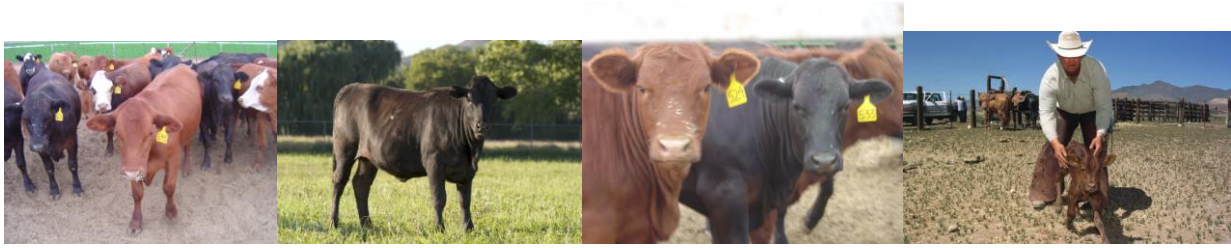
Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

Beautiful Bovine

(Derived from Oklahoma and Illinois Ag in the Classroom)



Arizona State Learning Standards. This lesson is correlated to the following State Learning Standard.

1. Life Science expands students' biological understanding of life by focusing on the characteristics of living things and the diversity of life. The understanding includes the relationship of structures to their functions.

Arizona State Objectives: This lesson addresses the following objectives: (Strand, Concept, Performance objective)

First Grade:	4.1.1, 4.1.2, 4.1.3
Second Grade:	4.1.1, 4.1.2
Third Grade:	4.4.1

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

- ✓ Demonstrate knowledge how a cow is different from a human through a demonstration to examine some of the body part of a cow.

Materials Needed:

- ✓ Surgical Glove
- ✓ Yarn
- ✓ Fly swatter
- ✓ Plastic Headband
- ✓ Cardboard
- ✓ Socks (2)
- ✓ Sand paper
- ✓ Four whoopee cushions
- ✓ Leather vest
- ✓ Gum

Terms:

Bovine- any of a group of ruminant mammals including oxen, bison and buffalo that have hollow horns and are related to the sheep and goats.

Breed- A group of animals or plants usually found only under human care and that are

different from related kinds.

Hoof- A covering of horn that protects the front of or encloses the ends of the toes of some mammals and that corresponds to a nail or claw.

Poll- To cut off or cut short the horns of cattle.

Udder- A large bag-shaped organ consisting of two or more mammary glands enclosed in a common pouch but with each having a separate nipple.

Veterinarian- A person who is qualified and has been given the authority to treat disease and injuries of animals.

Teaching Strategies: Use as an introduction to cattle. Ask for a student volunteer and have the rest of the students give you the answers. Place items on the student as they are called out by remaining students. Explain why the particular parts are different between humans and cattle using the teacher information sheet.

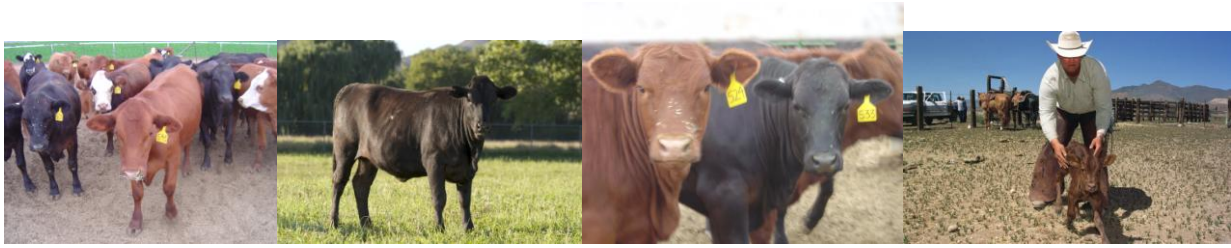
Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

Chew it Twice

(Derived from Oklahoma Ag in the Classroom)



Arizona State Learning Standards. This lesson is correlated to the following State Learning Standard.

1. Life Science expands students' biological understanding of life by focusing on the characteristics of living things and the diversity of life. The understanding includes the relationship of structures to their functions.

Arizona State Objectives: This lesson addresses the following objectives: (Strand, Concept, Performance objective)

First Grade:	4.1
Second Grade:	4.1.2, 4.1.3
Third Grade:	4.1

Student Learning Objectives: Instruction in this lesson should result in students achieving the following objective:

- ✓ Demonstrate knowledge how a cow is different from a human through a demonstration to examine some of the body part of a cow.

Materials Needed:

- ✓ Green, yellow, and blue crayons
- ✓ Science Lesson 2- Student Handout

Terms:

Abomasum- the *fourth compartment* of the ruminant stomach that follows the omasum and has a true digestive function.

Bovine- any of a group of ruminant mammals including the oxen, bison, and buffalo that have hollow horns and are related to the sheep and goats.

Cud- Food brought up into the mouth by the cow from the rumen to be chewed again.

Intestine- The part of the alimentary canal that is a long tube composed of the small intestine, that extends from the stomach to the anus, that help to digest food and

absorb nutrients and water, and that carries waste matter to be discharged.

Manure- material that fertilizes land; bodily waste

Omasum – The third compartment of the stomach. It is the primary aid in the absorption of water, magnesium, and the volatile fatty acids produced by rumen fermentation, that have not been absorbed into the bloodstream yet

Reticulum - the book" or many piles because of its many leaf-like folds. It functions as the gateway to the abomasum, filtering large particles back to the reticulum and allowing fine particles and fluid to be passed to the abomasum. Though the complete function of this compartment is unknown, it does aid in water re-absorption and recycling of buffers for the saliva. The omasum may also absorb some volatile fatty acids

Rumen – the stomach compartment where tiny microbes digest the fiber in plant materials.

Teaching Strategies: Use as an introduction to cattle. Review background information with your students and then hand out student worksheet Chew It Twice. Read allowed the path food takes on its way through the cow. Have your students use a green crayon to trace from the mouth to the rumen to the reticulum. Use a yellow crayon to trace the path back to the mouth. Use a blue crayon to trace from the mouth to the omasum to the abomasum to the intestine.

Review/Summary: Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

Application: Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

Evaluation: Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.