

Locating Sheep



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

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.

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.G.1, K.MP.7*

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

1. Identify concepts and terms of position and size in contextual situations

Materials needed:

- ✓ Math Lesson 1 Student Worksheet

Terms:

- **Lamb** - a sheep less than a year of age that has not produced offspring
- **Coyote** - a predator to sheep

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- Locating Sheep**.

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 re-teaching areas where student mastery may need improvement.

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.

Counting Sheep



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

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

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.

Counting and Cardinality (CC): Know number names and the count sequence, count to tell the number of objects, and compare numbers.

Measurement and Data (MD): Describe and compare measurable attributes; classify objects and count the number of objects in categories; measure and estimate lengths indirectly and by iterating length units; tell and write time; represent and interpret data; work with money; Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects; understand concepts of area and relate area to multiplication and to addition; recognize perimeter as an attribute of plane figures and distinguish between linear and area measures; solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit; and understand concepts of angle and measure angles.

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.CC.2, K.OA.1, K.MP.1, K.MP.2, K.MP.4, K.MP.5, K.MP.7
First Grade:	1.OA.6, 1.MP.2, 1.MP.3, 1.MP.3, 1.MP.4, 1.MP.5, 1, MP.6, 1.NBT.2, 1. NBT.5, 1.NBT.4, 1.NBT.6, 1.MD.4
Second Grade:	2.OA.2, 2.OA.3, 2.NBT.2, 2.NBT.5, 2.NBT.8, 2.MD.10, 2.MP.1, 2.MP.2, 2. MP.4, 2.MP.5, 2.MP.5, 2.MP.6, 2.MP, 7, 2.MP.8
Third Grade:	3.NBT.2, 3.MD. 3, 3.MP.1, 3.MP.2, 3.MP.4, 3.MP.6, 3.MP.7, 3.MP.8

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

1. Express whole numbers 0 to 1000, in groups of hundreds, tens and ones using and connecting multiple representations.
2. Express whole numbers 0 to 100, in groups of tens and ones using and connecting multiple representations
3. Identify numbers which are 10 more or less than a given number to 90
4. Recognize, describe, extend, create, and record repeating patterns
5. Recognize, describe, extend, create, and record growing patterns
6. Identify place values
7. Organize, represent, and interpret data with up to 3 categories; ask and answer questions about the total number of data point, how many in each category, and how many more or less are in one category than in another.

Materials needed:

- ✓ Math Lesson 2 Student Worksheets

Terms:

- **Ewe** - a female/girl sheep
- **Lamb** - a sheep less than a year of age that has not produced offspring
- **Ram** - a male/boy sheep
- **Sheep** - an animal over 1 year of age that has had a baby lamb

Teaching Strategies: Have students complete the grade appropriate *Math Lesson 2 Student Worksheet- Locating Sheep*.

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 re-teaching areas where student mastery may need improvement.

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.

Sheep Word Problems



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

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.

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

First Grade:	1.OA.1
Second Grade:	2.OA.1
Third Grade:	3.OA.3
Fourth Grade:	4.OA.3
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. Solve word problems using grade-level appropriate operations and numbers

Materials needed:

- ✓ Math Lesson 3 Student Worksheets

Terms:

- **Carpet Wool** - The coarsest, lowest grade wool is used in the production of carpet
- **Ewe** – a female/girl sheep
- **Herd** – a number of animals of one kind kept together under human control
- **Lamb** – a sheep less than a year of age that has not produced offspring
- **Long Wool Sheep** – produce wool with a large fiber diameter, usually greater than 30 microns
- **Medium Wool Meat Sheep** – Meat or mutton sheep produce wool, mostly medium to long, but are raised more for their meat quality than wool
- **Pasture** – an area covered with grass or other plants used or suitable for the grazing of livestock
- **Shear** – to cut or clip the hair, fleece, or wool from sheep
- **Sheep** - an animal over 1 year of age that has had a baby lamb

Teaching Strategies: Have the students complete Math Lesson 3 Student Worksheet- Sheep Word Problems.

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 re-teaching areas where student mastery may need improvement.

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.

Sheep Logic Puzzle



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

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

First Grade: 1.MP.1

Second Grade: 2.MP.1

Third Grade: 3.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 4 Student Worksheet

Terms:

- **By-product** - a secondary or incidental product, as in a process of manufacture, products from sheep besides meat or wool

Teaching Strategies: Instruct the students to apply logical thinking to solve a puzzle. Have the students complete **Math Lesson 4 Student Worksheet- Sheep 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 re-teaching areas where student mastery may need improvement.

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.

Operation Sheep



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

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.

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
Second Grade:	12.OA.2
Third Grade:	3.OA.7, 3.NBT.2
Fourth Grade:	4.NBT. 4, 4.NBT.6
Fifth Grade:	5.NBT.5, 5.NBT.6

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

1. Use grade appropriate operations to solve mathematical equations

Materials needed:

- ✓ Math Lesson 5 Student Worksheets

Terms:

- No terms were identified in this lesson

Teaching Strategies: Have the students complete **Math Lesson 5 Student Worksheet- Operation Sheep**. Use the answers from the sheep operations to eliminate the numbers in the sheep. The remaining number is the answer to the trivia question.

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 re-teaching areas where student mastery may need improvement.

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- Sheep



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.

Second Grade: 2.RF.1, 2.RL.1

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

Fourth Grade: 4.RF.1, 4.RL.1

Fifth Grade: 5.RF.1, 5.RL.1

Sixth Grade: 6.RF.1, 6.RL.1

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

1. Students will read with understanding and fluency
2. Explore the sheep and wool industry
3. Students will understand the importance of sheep in their everyday lives

Materials needed:

- ✓ Sheep AgMag
- ✓ Language Arts lesson 1 Student Worksheet

Terms:

- No terms were identified in this lesson

Teaching Strategies: Read with your students or have students read in pairs or individually from the Sheep AgMag. After discussing the material have students use the Sheep AgMag and classroom discussion to complete the Show What You Know Student Worksheet.

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 re-teaching areas where student mastery may need improvement.

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- America's Heartland



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

Second Grade: 2.SL.2

Third Grade: 3.SL.2

Fourth Grade: 4.SL.2

Fifth Grade: 5.SL.2

Sixth Grade: 6.SL.2

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

1. Students will read with understanding and fluency
2. Explore the sheep and wool industry
3. Students will understand the importance of sheep in their everyday lives

Materials needed:

- ✓ America's Heartland DVD
- ✓ Language Arts lesson 2 Student Worksheet

Terms:

- No terms were identified in this lesson

Teaching Strategies: Watch the America's Heartland Sheep Drive DVD with your students. After discussing the material have students use the movie and classroom discussion to complete the Show What You Know Student Worksheet. Replay the DVD if necessary.

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 re-teaching areas where student mastery may need improvement.

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.

Sheep in a Jeep (adapted from a lesson by Amanda Post)



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.

Kindergarten: K.RF.2

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

1. Students will identify rhyming words
2. Students will take a picture walk through the selected reading

Materials needed:

- ✓ Sheep in a Jeep Book

Terms:

- No terms were identified in this lesson

Teaching Strategies:

1. **Day 1** Show students the cover of the Sheep in a Jeep Book. Ask the students to identify what they see. Take a picture walk through the book. Have the students tell you what they think is happening on each page.
2. **Day 2** Read the Sheep in a Jeep book through once without stopping. Students may laugh and make comments, but do not ask them any questions as you read.
3. **Day 3 and beyond** focus on the rhyming words. Create a rhyming chart. As you read through the story have students add words to the rhyming chart. Stop reading each time the students identify a word to add to the chart. Add the word to the chart and begin reading again. Have students create their own rhyming statement/sentence using sheep. *For example: sheep leap*

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 re-teaching areas where student mastery may need improvement.

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 objective.

The Sheep Story



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.

Second grade: 2.L.4, 2.L.5

Third Grade: 3.L.4, 3.L.5

Fourth Grade: 4.L.4, 4.L.5

Fifth Grade: 5.L.4, 5.L.5

Sixth Grade: 6.L.4, 6.L.5

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

1. Use homonyms correctly in text
2. Alphabetize a series of words to the first, second and third letter
3. Correctly identify and select the correct tense of words in a story

Materials needed:

- ✓ English Language Arts Lesson # 4 Student Worksheets
- ✓ Pencil

Terms:

- **Aid** - the act or result of helping
- **Allowed**- to let do or happen
- **Ate**- the past tense of eat
- **Bear** – an animal; predator; carnivore
- **Coarse** – rough, especially to the touch
- **Ewe** – a full grown female sheep
- **Graze** – to feed on growing grazes and plants
- **Herd** – a group of sheep or other domesticated animals
- **Lamb** – a young sheep
- **Piece** – a portion or part
- **Raise** – to grow, take care of

- **Ram**- a male sheep
- **Which** – any one or any number of
- **Whole** – the full amount, not split
- **Wool** – the hair of sheep

Teaching Strategies: Pass out the grade appropriate student worksheet. Review the vocabulary and definitions associated with this lesson. Have students complete the worksheet individually or as a class. After completing the sheep story tense worksheet have the students create their own sheep story using the sheep writing paper.

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 re-teaching areas where student mastery may need improvement.

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.

Sheep Shearing



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
2. **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.
3. **Reading Standards for Literature (RL):** Students gain adequate exposure to a range of texts and tasks.

Kindergarten: K.SL.2, K.RF.2, K.RL.2

First Grade: 1.SL.2, 1.RL.2

Second grade: 2.SL.2, 2.RL.2

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

1. Students will be able to correctly sequence events from a literary selection
2. Students will be able to continue the sequence with at least one event not included in the story through a literary response
3. Students will be able to correctly identify rhyming words from the literary selection
4. Students will be able to use prediction skills to complete a KWL chart as they read through the literary selection

Materials needed:

- ✓ English Language Arts Lesson # 5 Student Worksheets
- ✓ Pencil
- ✓ Farmer Brown Shears His Sheep
- ✓ Laminated picture cards

Terms:

- **Shear** - to cut or clip the hair, fleece, or wool from sheep

Teaching Strategies: After reading the story, pass out the grade appropriate student worksheet. Review the vocabulary and definitions associated with this lesson. Have students complete the worksheet individually or as a class. Pass out the laminated picture cards and have the students sequence the cards by arranging themselves in the correct order.

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 re-teaching areas where student mastery may need improvement.

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.

Sheep to Clothes Flow Chart



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

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

Fourth Grade: 4.W.4, 4.SL.2

Fifth Grade: 5.W.4, 5.SL.2

Sixth Grade: 6.W.4, 6.SL.2

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

1. Students will be able to correctly sequence events from a literary selection
2. Students will be able to continue the sequence with at least one event not included in the story through a literary response
3. Students will be able to use observation skills to organize a written response as well as organize to compare and contrast the main character's town to their own

Materials needed:

- ✓ English Language Arts Lesson # 6 Student Worksheets
- ✓ Pencil
- ✓ A New Coat for Anna

Terms:

- **Barter:** The act of trading goods and services without the use of money.

Teaching Strategies: Pass out the grade appropriate student worksheet. Review the vocabulary and definitions associated with this lesson. Have students complete the worksheet individually or as a class.

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 re-teaching areas where student mastery may need improvement.

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.

The Arizona Trail



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

1. **Geography-** Interpret the arrangement and interactions of physical systems of the Earth.

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

First Grade:	4.1.3, 4.1.4
Second Grade:	4.1.3, 4.1.6
Third Grade:	4.1.3, 4.1.7
Fourth Grade:	4.1.3, 4.1.7
Fifth Grade:	4.1.6
Sixth Grade:	4.1.1

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

1. Students will be able to locate specific items on the map using coordinates
2. Students will be able to construct a map of their classroom, school, or neighborhood
3. Students will be able to correctly map stops along the Sheep Trail including rivers and mountain ranges

Materials needed:

- ✓ Social Studies Lesson # 1 Student Worksheets
- ✓ Pencil
- ✓ Emily Walks the Sheep Trail

Terms:

➤ None

Teaching Strategies: Pass out the grade appropriate student worksheet. Review the vocabulary and definitions associated with this lesson. Have students complete the worksheet individually or as a class.

Students can then construct a map of their classroom, school, or neighborhood to reinforce their understanding of mapping concepts.

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 re-teaching areas where student mastery may need improvement.

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.

Sheep Producers Around the World Student Worksheet



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

1. **Geography-** Interpret the arrangement and interactions of physical systems of the Earth.

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

Third Grade: 4.1.5, 4.1.7

Fourth Grade: 4.1.4, 4.1.6

Fifth Grade: 4.1.4, 4.1.6

Sixth Grade: 4.1.1, 4.1.4

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

1. Students will be able to locate specific items on the map using coordinates
2. Students will be able to construct a tally chart of sheep producers around the world

Materials needed:

- ✓ Social Studies Lesson #2 Student Worksheets
- ✓ Pencil

Terms:

➤ **None**

Teaching Strategies: Pass out the grade appropriate student worksheet. Review the vocabulary and definitions associated with this lesson.

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 re-teaching areas where student mastery may need improvement.

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 We Wear



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

1.Geography- Interpret the arrangement and interactions of physical systems of the Earth.

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

First Grade:	4.1.5
Second Grade:	4.1.6
Third Grade:	4.1.5, 4.1.7
Fourth Grade:	4.1.4, 4.1.6
Fifth Grade:	4.1.4, 4.1.6
Sixth Grade:	4.1.1, 4.1.4

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

1. Students will be able to locate specific items on the map using coordinates
2. Students will be able to construct a tally chart of clothes manufacturers around the world

Materials needed:

- ✓ Social Studies Lesson #3 Student Worksheets
- ✓ Pencil

Terms:

➤ **None**

Teaching Strategies: Pass out the grade appropriate student worksheet. Review the vocabulary and definitions associated with this lesson.

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 re-teaching areas where student mastery may need improvement.

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.

History of Wool



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

1. World History - Analyze the human experience through time to recognize the relationship of events and people, and to interpret significant patterns, themes, belief, and turning points in world history.

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

Kindergarten:	2.1.1
First Grade:	2.1.1
Second Grade:	2.1.2
Third Grade:	2.1.1
Fourth Grade:	2.1.1
Fifth Grade:	2.1.2
Sixth Grade:	2.1.3

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

1. Students will be able to sequence key events in the history of wool
2. Students will be able to construct a timeline of key events in the history of wool

Materials needed:

- ✓ Social Studies Lesson #4 Student Worksheets
- ✓ Pencil
- ✓ Laminated Picture Cards

Terms:

- **Domesticated:** To convert to domestic use; tame
- **Flying Shuttle:** An improvement to looms that enabled weavers to weave faster
- **Spinning Jenny:** A hand-powered multiple spinning machine
- **Water Frame:** It was the first water powered, automatic, and continuous textile machine.

Teaching Strategies: Pass out the grade appropriate student worksheet. Review the vocabulary and definitions associated with this lesson. Pass out the laminated picture cards and have the students sequence the pictures by arranging themselves in the correct order.

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 re-teaching areas where student mastery may need improvement.

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.

Pounds of Wool



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

1. World History- Analyze the human experience through time to recognize the relationship of events and people, and to interpret significant patterns, themes, belief, and turning points in world history.

2. Economics- The foundation of economics are the application of basic economic concepts and decision making skills. This includes scarcity and the different methods of allocation of goods and services.

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

First Grade: 2.1.3, 5.1.3

Second Grade: 2.1.4, 5.1.6

Third Grade: 2.1.3, 5.1.5

Fourth Grade: 2.1.3

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

- ✓ Demonstrate knowledge how wool is purchased and processed into clothing

Materials Needed:

- ✓ Social Studies Lesson #5 Student Worksheets
- ✓ Loom
- ✓ Yarn
- ✓ Hand Carders
- ✓ Raw Wool

Terms:

- **Carding-** combing wool
- **Dyed** –dipped in colored liquid
- **Fleece** – the wool from a sheep right after it has been cut off

- **Wool** – the fiber that most sheep grow; sheep’s hair

Teaching Strategies: Use as an introduction to wool production. Pass out the grade appropriate student worksheet. Review the vocabulary and definitions associated with this lesson. Have students break into three groups. Have the first group read the overview and answers questions that follow. Have the second group of students take turns carding the raw wool. The third group of students will use the looms to create a small weaving. Have the groups rotate through all three activities.

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.

Cotton or Wool Investigation



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

1. Inquiry Process- Observe, ask questions, and make predictions.

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

Kindergarten:	1.1.2, 1.1.3
First Grade:	1.1.2, 1.1.3
Second Grade:	1.1.1, 1.1.2
Third Grade:	1.1.1, 1.1.2

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

- ✓ Demonstrate knowledge of wool characteristics through using their senses to differentiate between animal and plant fibers

Materials Needed:

- ✓ Science Lesson #1 Student Worksheet
- ✓ Wool
- ✓ Cotton
- ✓ Soil
- ✓ Hay
- ✓ 12 Paper Lunch Bags
- ✓ 10 Magnifying Glasses

Terms:

- None

Teaching Strategies: Introduce the difference between plant and animal fibers. Plant fibers are items such as cotton that are produced or made from plants. Animal fibers are those given by animals such as wool.

- Set up three stations around the room for students to rotate through. Break the class into even groups.

1. At the first station have the students reach inside the numbered lunch bags without looking and predict what is inside the bag based solely by what they feel. Then have the students guess which bag is an animal fiber and which is a plant fiber. Then have them match the remaining two bags to the fiber that would need them to grow. For example, the sheep needs to eat in order to produce wool where cotton needs soil to grow. Have them record their answers as they go on the student worksheet.

2. At the second station have students choose a bag. Without looking at what is inside open the bag and smell its contents. Make a prediction about what is in your bag. Then smell the bags of students around you and try to find a matching bag. Record your predictions and how many matches you found on the student worksheet.

3. At the third and final station use a magnifying glass to look at two samples lying on the table. Have them record what they see on the student worksheet.

4. When students have rotated to all three stations go over each station and reveal the answers to see whose predictions were correct!

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.

Which is Warmer

(Adapted from Oklahoma Agriculture in the Classroom)



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

1. Inquiry Process- Observe, ask questions, and make predictions.

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

Kindergarten: 1.1.2, 1.1.3

First Grade: 1.1.2, 1.1.3

Second Grade: 1.1.1, 1.1.2

Third Grade: 1.1.1, 1.1.2

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

- ✓ Demonstrate knowledge of wool characteristics through using their senses to differentiate between wool and manmade fibers

Materials Needed:

- ✓ Wool gloves
- ✓ Synthetic gloves
- ✓ Ice cubes
- ✓ Plastic Ziploc bags
- ✓ Samples of wool clothing
- ✓ Samples of other wool products

Terms:

- **Wool:** the fiber that most sheep grow; sheep's hair
- **Synthetic:** manmade fibers

Teaching Strategies: Introduce wool by reading the background to the students.

1. Each student will put a wool glove on one hand and a synthetic fiber glove on the other hand.

- Sprinkle 2 tablespoons of water over the palm of each glove.

- Have student rub their hands together and wait for five minutes.

- After five minutes, ask students which hand feels warmer? Which one feels cooler?

- Have students remove both gloves and set them wet side down on separate paper towels.

- After a few seconds, students will decide which glove still has more water on the surface.

*The wool glove should have more, since wool will not lose as much water as manmade fiber.

2. Designate a “Wool Day” and have students wear or bring into class items made from wool.

- Set up a display of items that are made from wool.

3. Bring several items of clothes to class.

- Students will determine if they are made from wool or a manmade fiber.

4. Conduct the ice cube test

- Give each student two tightly sealed bags, each containing 2-3 ice cubes.

- Each student will put a wool glove on one hand and a non-wool glove on the other hand and hold one plastic bag filled with ice in each hand for five minutes.

- Lead a discussion based on the following: Which cube melted first? Which hand felt cold first? Which glove would you want to wear if you were playing in the snow?

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.

Silly Sheep



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 sheep is different from a human through a demonstration to examine some of the body part's of a sheep

Materials Needed:

- ✓ Science Lesson #3 Student Worksheet
- ✓ Surgical Glove
- ✓ Yarn
- ✓ Plastic Headband
- ✓ Socks (2)
- ✓ Four whoopee cushions
- ✓ Wool vest
- ✓ Gum
- ✓ Laminated Picture Cards

Terms:

- **Ruminant-** an animal that has cloven hooves; an animal that has a 4-chambered stomach
- **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.
- **Udder-** A large bag-shaped organ consisting of two mammary glands enclosed in a common pouch but with each having a separate nipple.
- **Veterinarian-** A person who is qualified and has been given authority to treat disease and injuries of animals

Teaching Strategies: Use as an introduction to sheep. 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 sheep 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

(adapted 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 of how a sheep is different from a human through a demonstration to examine some of the body parts of a sheep

Materials Needed:

- ✓ Science Lesson 5- Student Worksheet
- ✓ Green, yellow, and blue crayons

Terms:

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

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 sheep. 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 sheep. 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.

Great Balls of Fire

Derived from Oklahoma Ag in the Classroom



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

1. **Inquiry Process-** the basis for student's learning in science. Student's use scientific processes.

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

Fifth Grade: 1.1.2, 1.2.1, 1.2.4, 1.2.5, 1.3.1, 1.4.2

Sixth Grade: 1.1.2, 1.2.1, 1.2.2, 1.2.3, 1.2.5, 1.3.1, 1.4.1

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

1. Identify cotton terms.
2. Students will demonstrate lab safety.
3. Understand the flammability of different fabrics.
4. Create and test hypothesis

Materials needed:

- ✓ Science Lesson #5 Student Worksheets
- ✓ 2 deep glass dishes
- ✓ Long fireplace matches
- ✓ 1 metal pie pan
- ✓ Metal tongs
- ✓ Leather glove
- ✓ 3" swatches wool, cotton, linen and silk
- ✓ 3" swatches of polyester, acrylic, and nylon
- ✓ Pitcher of water
- ✓ Fire extinguisher
- ✓ Stop watch
- ✓ Magnifying glass

Terms:

Absorb- to soak up a liquid or take in nutrients or chemicals gradually

Bale- a large bundle or package of a raw material such as hay or cotton, tightly bound with string or wire to keep its shape during transportation or storage

Cotton Boll- rounded seed-pod of the cotton plant

Evaporate- to change a liquid into a vapor

Flammable- readily capable of catching fire

Fleece- the coat of wool on a sheep or similar animal

Shear- to cut hair, fleece, or foliage from the surface of something using a sharp tool

Textile- raw material used for making fabrics, e.g. fiber or yarn

Texture- the feel and appearance of a surface, especially how rough/smooth or soft/hard it is

Teaching Strategies: *Check with your school's safety officer, principal or appropriate school administrator before conducting this activity.*

1. Read and discuss background and vocabulary
2. The demonstration should be performed over a lab table or a table. Clear the area of loose paper or debris.
3. Review lab safety rules
4. Show students fabric swatches
 - a. Student will identify the swatches according to their fiber content
 - b. Students will use online sources to find the source of each fiber identified
 - c. Students will record information on Worksheet A
5. Students will predict the rate (fast or slow) of flammability and burn for each fiber on the worksheet
6. Assign one person as a timekeeper and provide him/her with a stop watch
7. Hold one fabric swatch at a time with the tongs, and light the edge
 - a. The timekeeper will record how long it takes each sample to burn
 - b. Hold each sample above the glass dish so the class can observe the burning pattern.
 - c. As the remains fall into the glass dish, students will observe the characteristics of the ash (color, texture, etc)
 - d. Students will discuss the effect each material might have on a burn victim
8. Transfer the ashes or residue to the pie plate
 - a. Students will inspect the materials with a magnifying glass
 - b. When students are finished examining the ashes, place the ashes in water
9. After all fabrics have been burned, students will answer the questions on Worksheet B.
10. Students will compare and contrast the properties of the different kinds of fabrics.
 - a. What differences did students see between the natural and synthetic fabrics?
11. After the class discussion each student will write a short summary of the results of the fiber test by reviewing the information gathered on Worksheets A and B.

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.

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 the student achievement of the objectives.

By-product Bingo



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

1. Learn sheep by-products while playing Bingo.
2. Show an understanding of “vertical,” “horizontal,” and “diagonal” while playing bingo.

Materials needed:

- ✓ By-products Bingo Card worksheet
- ✓ “markers” marshmallows
- ✓ Scissors and glue

Terms:

- **By-products** - Something produced in the making of something else; a secondary or incidental product of a manufacturing process

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: Discuss the introduction information with your students. Have students cut out their by-product pieces and chose 24 pieces to glue to the squares on their bingo card. Glue squares in any order on the open squares. Play Bingo!

Review/Summary: Discussion Questions

1. Name five sheep by-products
2. What parts of a sheep are used for by-products?

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.