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Welcome to the National Agricultural Literacy Curriculum Matrix

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The National Agricultural Literacy Curriculum Matrix is an online, searchable, and standards-based curriculum map for K-12 teachers. The Matrix contextualizes national education standards in science, social studies, and nutrition education with relevant instructional resources linked to Common Core Standards. Search our instructional, classroom-ready resources now! After you find what you need, consider storing them in your personal binder — MyBinder! Create a MyBinder profile now, or login.

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We are always looking for quality resources! Submit an innovative lesson plan or relevant companion resource today!

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- Close-to-Home Search

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National Agricultural Literacy Curriculum Matrix

Search
Lesson Plan(s)

Source Search (Grades 3-5)
In this lesson students will learn that agriculture provides nearly all of the products we rely on in any given day by participating in a relay where they match an everyday item with its "source."

Source Search (Grades 6-8)
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National Agricultural Literacy Curriculum Matrix

Source Search (Grades 3-5)
Grade Level(s)
3 - 5

Estimated Time
45 minutes

Purpose
In this lesson students will learn that agriculture provides nearly all of the products we rely on in any given day by participating in a relay where they match an everyday item with its "source."

Materials
Interest Approach – Engagement
- Morning Activities Images

Activity
- Glue
- Colored index cards or card stock in 2 different colors (for mounting product pictures)*
- Source Search Pictures, 1 copy*
- Four boxes labeled "Farms," "Factories," "Farms," and "Natural Resources"*
- Source Search Reference List, 1 copy for the teacher*

*These items are included in the Source Search Kit, which is available for purchase from agclassroomstore.com

Essential Files (maps, charts, pictures, or documents)
- Morning Activities Images
- Source Search Pictures
- Source Search Reference List

Vocabulary:
agriculture: the science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool, and other products
mineral: a solid inorganic substance of natural occurrence obtained from mining
natural resources: materials or substances such as minerals, forests, water, and fertile land that occur in nature and can be used for economic gain
source: a place, person, or thing from which something originates
Materials

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- Morning Activities Images

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**source**: a place, person, or thing from which something originates

Did you know? (Ag Facts)
  - *Fiber* is the word farmers and ranchers use to describe the raw product for fabric. The two most commonly used farm-produced fibers are wool and cotton.
  - More than 24 million American workers (17 percent of the total US workforce), process and sell the nation's food and fiber.
  - About 18 percent of all US agricultural products are exported yearly.
Background Agricultural Connections
If you were to take a moment to look around and identify the items you rely on every day, they would likely include food, clothing, modes of transportation such as cars or bikes, building materials such as steel or wood, various technological devices such as cell phones or computers, and several tools and machines. Where did these items and raw materials used to make them originate? This lesson helps students answer that question.

Many people might recognize that farms provide us with whole, raw foods like fruits, vegetables, milk, meat, and eggs. They might even recognize that foods such as bread, pasta, cheese, frozen chicken nuggets, and canned foods also come from a farm, but are first prepared and packaged at a food processing facility. However, in reality, agriculture also provides us with a wide variety of raw materials used make clothes, books, cosmetics, medicine, sports equipment, and much more.

Everything we make and use in society can originally be found somewhere in our environment or it is produced on farms by using natural resources such as land and water. Resources such as metal and glass are made from minerals that are extracted from the earth through the process of mining. Most plastics are a byproduct of oil which is extracted from beneath the Earth's surface. Other items we rely on from day-to-day are products of agriculture. Farms exist in numerous sizes and various locations and include many different products ranging from food and clothing to fuel and building supplies.

While many day-to-day items were built, processed or manufactured at a factory and eventually sold at a store, it is important for students to understand that they each began as a resource of the natural world and/or a product of agriculture.

less ...
Interest Approach – Engagement

1. Ask the students, "What did you do to get ready for school this morning?"
2. Project the *Morning Activities Images* onto a large screen.
3. Point to the picture of the child eating breakfast. Ask the students what items the child used while eating breakfast. (*cereal, milk, bowl, spoon, etc.*) Ask the students what items were used to complete the other activities shown in the pictures.
4. Explain to the students that they use many different items and eat different types of food each day. Inform the students that they will be participating in an activity to learn about many of the items they use every day.

Procedures

Preparation

1. Print and cut out the attached *Source Search Pictures* showing 40 everyday items.
   - Optional: If you prefer to get your students involved in the preparation stage (and have time), have students collect their own pictures of every day items. Gather a variety of magazines or slick ads from the Sunday newspaper and instruct your students to cut out pictures that represent items they use regularly (food, cars, soap, clothes, computer, etc.) Avoiding duplication, select 40.
2. Randomly divide the 40 pictures into two groups. Use two colors of index cards (or card stock) and glue the pictures onto the cards. Laminate the pictures for future use.
3. Obtain four containers (boxes, plastic tubs, paper box lids, or paper grocery bags) and label each with one of the following: "Stores," "Factories," "Farms," and "Natural Resources."
4. Identify a suitable location for a relay race such as an area outside, a wide hallway, or the gymnasium.
5. After the relay is over and the pictures are sorted, return to the classroom or have the students gather around you in a suitable location to go through the cards and discuss the correct answers. As you hold up each picture, the students can show whether they agree or disagree with the sort using the “thumbs up” or “thumbs down” signal, or another response as chosen. Use the attached Source Search Items Reference List for the correct answers and explanations for each card. If you choose to keep score to identify a winner, tally the number of cards in the correct boxes for each team.

- **Farms:** Explain that if the item contains ingredients or raw products from a farm, the item is in the correct box. Examples would be any food items such as cereal, cookies, and milk, or any clothing item made from a natural fiber such as cotton (jeans) or wool (coat). Some items from a farm that are not eaten or worn include paint (this contains linseed or soybean oil) or fuel such as ethanol.
  - Note: After most relays, the “Farms” container will typically have only a few items in it.

- **Natural Resources:** Explain that items in this tub should be products we get from the ocean, from plants or animals that occur naturally without management from humans, or from mining. Examples of items that should be in this box are cars, salt, water, plastic (plastic starts as oil, which is mined) synthetic fabrics (polyester, petroleum or oil products), computers, cell phones, and any metallic items. Fish or shrimp can be caught in the wild, but can also be farmed. Wood products may be in this box, but many wood products come from timber grown on farms. Let the class decide how to divide these. Remind your students that this is the “source” search. What is the “real” source of the things we use every day? Nearly all are grown or mined — farmed or extracted from the natural world.
  - Note: This tub is also likely to only have a few items inside.

- **Factories:** Explain that a factory is a place where raw ingredients are changed into the useful items we need or want; wood into furniture, ore into steel for cars, wheat into bread, and potatoes into chips. A factory assembles items to later be sold in a distribution center or store. With this information, ask students, “Can factories be the original source of any items?” (No) Proceed by sorting every card in the “Factories” box into either the “Farms” or “Natural Resources” container. After doing this, your students should understand that all products were originally grown or mined.

- **Stores:** Move to the box labeled “Stores.” After receiving the explanation about factories, check for understanding by asking, "Are stores the original source of any items?" Students should realize that, like the “Factories” container, nothing should be in the “Stores” container. Stores are where we purchase items and are not their original source. Clarify that factories and stores rely on raw ingredients from the farm and natural world. Every picture or product should now be in either the “Farms” or “Natural Resources” container.
6. Explain to the students that farms need water, soil, the sun, and air to grow and raise plants and animals. To illustrate, place the “Farms” box inside the “Natural Resources” box.

**Concept Elaboration and Evaluation**

After conducting this activity, consider repeating the relay a second time using only two containers, “Farms” and “Natural Resources” to assess student understanding.

Review and summarize the following key concepts:

- The items we use every day either began as a resource of the natural world or was produced on a farm.
- The raw materials produced on farms are used for food, clothing, and many other items we use every day.
- Factories and stores are not the original sources of any items. Factories build, process, and/or manufacture items and stores are distribution centers.

We welcome your feedback! Please take a minute to tell us how to make this lesson better or to give us a few gold stars!

**Enriching Activities**

- Ask your students to create a concept web with one of the pictures used in the “Source Search” activity. Each picture should be placed in the center of a piece of large paper and the web drawn to identify associations or links to careers, natural resources or other products.
- Discuss the importance of conserving and managing natural resources.
- Read Issue 1 of *Ag Today* titled *Agriculture is Everywhere!* This reader can be printed or accessed digitally. It describes the connections humans make daily with agriculture from business and science to the practices of growing and selling row crops and animals to be used for food, fiber, and fuel.

*Special Suggestion:*
Suggested Companion Resources

- Farm Pop-Ups (Activity)
- All in Just One Cookie (Book)
- Cotton Now & Then: Fabric-Making from Boll to Bolt (Book)
- From Start to Finish Series (Book)
- Heartland (Book)
- Homes (Book)
- How to Make an Apple Pie and See the World (Book)
- Ox-Cart Man (Book)
- The Cow in Patrick O'Shanahan's Kitchen (Book)
- To Market, To Market (Book)
- Where Did My Clothes Come From? (Book)
- Animal Facts (Poster, Map, Infographic)
- What Is Agriculture? (Poster, Map, Infographic)
- Careers in Agriculture Videos (Multimedia)
- Fascinating Farms Around the World (Multimedia)
- Growing Today for Tomorrow (Multimedia)
- How It's Made Documentary Series (Multimedia)
- If It Weren't for Farmers (Multimedia)
- Learning by Leaps: Agriculture and You (Multimedia)
- NMSU Field Trip! Video Series (Multimedia)
- Ag Today (Booklets & Readers)
- Into the Outdoors: Farm Science (Website)
- My American Farm (Website)

Sources/Credits

Activity adapted from Project Season, by Deborah Parrella.

Author(s)

Debra Spielmaker

Organization Affiliation

Utah Agriculture in the Classroom
Agricultural Literacy Outcomes

Agriculture and the Environment
- Recognize the natural resources used in agricultural practices to produce food, feed, clothing, landscaping plants, and fuel (e.g., soil, water, air, plants, animals, and minerals) (T1.3-5.e)

Culture, Society, Economy & Geography
- Explain the value of agriculture and how it is important in daily life. (T5.3-5.d)

Food, Health, and Lifestyle
- Diagram the path of production for a processed product, from farm to table (T3.3-5.b)

Plants and Animals for Food, Fiber & Energy
- Distinguish between renewable and non-renewable resources used in the production of food, feed, fuel, fiber and shelter (T2.3-5.b)
Education Content Standards

Within HISTORY
NCSS 3: People, Places, and Environments
   - Objective 7

NCSS 7: Production, Distribution, and Consumption
   - Objective 1
   - Objective 2
   - Objective 3
   - Objective 8

Within SCIENCE
4-ESS3: Earth and Human Activity
   - 4-ESS3-1
Common Core Connections

Speaking and Listening: Anchor Standards
- CCSS.ELA-LITERACY.CCRA.SL.6

Language: Anchor Standards
- CCSS.ELA-LITERACY.CCRA.L.6
Materials

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Essential Files (maps, charts, pictures, or documents)

- Morning Activities Images
- Source Search Pictures
- Source Search Reference List
Source Search

$14.00

Quantity:

Add to Cart
Add to Wish list

Description

If you were to take a moment to look around and identify the items you rely on every day, they would likely include food, clothing, modes of transportation such as cars or bikes, building materials such as steel or wood, various technological devices such as cell phones or computers, and several tools and machines. Where did these items and raw materials used to make them originate? The Source Search lesson, found on the National Agricultural Literacy Curriculum Matrix, helps students answer that question.

Kit includes: baskets, laminated Source Search pictures, construction labels, basket labels and Source Search reference list.
# National Agricultural Literacy Curriculum Matrix

## Lesson Plan(s)

**Source Search (Grades 3-5)**  
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## Companion Resources

**Type of Resource**

**Search Companion Resources**

## Search Lesson Plans & Companion Resources

**Source search**

**Search All**

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**Search**

**Lesson Plans**

- Keyword Search
- Grade Level
- Content Area
- Agricultural Literacy Outcomes
- Common Core Connections
- State Specific Content for
- Submitted by a Specific State
- Specific to the AITC Regions

[Search Lesson Plans]

**Companion Resources**

- Keyword Search
- Type of Resource

[Search Companion Resources]

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Lesson Plan(s)

**A Common Thread: The Significance of Wool in Medieval England**
Students will understand how agriculture influenced and shaped culture, class, and society during the Middle Ages.

**Baa, Ram, Ewe... Sheep Tales**
Students will learn about sheep while developing skills of inference by determining the difference between what’s real and what’s make-believe.

**Bartering Through the Seasons**
Students will learn about the seasons, become familiar with the process of wool production, and explore how trade and barter have historically allowed people to satisfy their needs and wants.

**Clothes on the Grow**
Students will gain a broad understanding of the types and sources of different fibers, examining their origins and observing their differences. Activities in this lesson include examining clothing and clothing labels and observing how different types of fabrics burn.

**From Wool to Wheel**
Students will investigate the importance of wool in colonial America and compare and contrast the differences between processing wool then and now. Students will spin, weave, and dye wool and watch videos illustrating how wool was processed in colonial times and how it is processed today.

Companion Resource(s)

**Activity**

**Hands-On With Wool**
Spinning, dyeing, weaving, and felting wool can easily be done in the classroom. This activity provides instructions and a materials list, making it easy to prepare a hands-on wool project for your class. Wool processing is a topic that connects easily to lessons in history and science.

**Book**

**A New Coat for Anna**
In *A New Coat for Anna* by Harriet Ziefert, Anna needs a new coat, but her mother has no money, and the stores are empty. The story takes place in the hard times following World War II. Anna's mother barter, directly exchanging goods or services with a sheep farmer, a spinner, a weaver, and a tailor to produce the new coat.
Hands-On With Wool

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Materials

Activity 1: Spinning the Wool

- Carded wool 1¼" x 14" (6.35 mm x 35.56 cm), 1 per student
- Spinning hooks, 1 per student
  - Carded wool and spinning hooks are available for purchase in a Wool Spinning Kit

Activity 2: Kool-Aid Dye Method

- Wool; cut to one arm’s length
- 1 Tbsp vinegar (15 mL)
- 1 cup water (240 mL)
- Glass bowl
- Microwave
- Kool-Aid

Activity 3: Natural Dye Method

- Wool; cut to one arm’s length
- Natural plants for dyeing

Activity 4: Weaving the Wool

- Cardboard
- String
- Spun and plied wool
- Spinning hook from the Wool Spinning kit (see activity 1 materials)
Activity 5: Felted Wool Marbles

- 2" x 2" (5.08 cm x 5.08 cm) pieces of dyed wool, 1 per student
- Bowl of warm, soapy water

Activity 6: Ziploc Felting

- Natural and dyed wool
- Tulle fabric
- Sandwich-size resealable bags, 1 per student
- Soapy water

Procedures

Activity 1: Spinning the Wool

1. Give each student a piece of carded wool approximately ¼" (6.35 mm) wide and 14" (35.56 cm) long. Fold about ½" (1.27 cm) of wool over the end of the spinning hook and begin spinning.
2. Back your non-spinning hand out as the wool is spun; this is called drafting.
3. Draft out the wool so that the spun wool is taut but not bumpy. If you get twisted bumps in your spun yarn, let out more unspun wool. When you have twisted the entire length of the wool, don’t let go—it will unspin. You are now ready to ply your yarn.
4. Plying the yarn will keep it from unspinning and make it stronger. Plying is the twisting together of two single strands of spun wool. Have someone hold the center of the twisted wool while you hold the ends.
5. Bring the ends of the wool together in one hand so that there are two strands side-by-side. Have your helper let go, and let the wool twist together. It should spring into a twisted strand. The double strand is now called plied yarn.
6. Tie the plied yarn around your wrist to form a friendship bracelet.

Note: You can view a demonstration of the wool spinning process.
Activity 2: Kool-Aid Dye Method

1. In a glass bowl, combine 1 package of Kool-Aid, 1 cup (240 mL) of water, and 1 tablespoon (15 mL) of vinegar. Stir until the Kool-Aid completely dissolves.
2. Completely immerse an arm’s length of wool into the Kool-Aid mixture.
3. Place the bowl of wool and Kool-Aid mixture into a microwave. Heat on high for two minutes.
4. Remove the bowl from the microwave and allow to cool. BE CAREFUL, IT’S HOT!
5. After the mixture has cooled, squeeze the liquid out of the wool and into the bowl. If the liquid is fairly clear, rinse the wool in cold water. If the liquid is not clear, heat the bowl of wool and Kool-Aid mixture for one additional minute before cooling and rinsing. This process will result in dyed wool that you can allow to dry and use in other projects.

Activity 3: Natural Dye Method

1. Select and chop the plant material. For a list of plants and their resulting colors, see the table below. About one pound (450 g) of plant material will produce satisfying color on about a half pound (240 g) of wool.
2. Cover the chopped plant material with water. Simmer for about an hour to allow the natural pigments to color the water.
3. Strain and discard the plant material (cheesecloth works well), and add pre-dampened wool to the liquid. You may have to add more water at this stage so that the wool is completely immersed.
4. Simmer for another hour or until the wool is the desired color.
5. Rinse in cold water.

Note: A mordant is a chemical that opens up the fiber so it bonds more easily with the dye, and produces a more vivid color. You may choose to add a mordant to the dye bath or use it on the wool before dying. However, most mordants (copper, tin, chrome, iron) are quite toxic. Alum or vinegar, both available at most grocery stores, can be used safely. Mordant is derived from the Italian word “mordere,” which means “to bite.” The colors will bite and be more intense if a mordant is used. In order to experiment with plants and color, give your students a piece of white poster board and instruct them to scrape a leaf or flower across the card. The resulting stain is a good indication of the color the plant will produce when used as a dye.

<table>
<thead>
<tr>
<th>Plant and/or Plant Part</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coreopsis bloom (fresh or dried)</td>
<td>Bright golden yellow</td>
</tr>
<tr>
<td>Onion skins</td>
<td>Rich reddish brown</td>
</tr>
<tr>
<td>Allida leaves and stems</td>
<td>Soft baby yellow</td>
</tr>
<tr>
<td>Poplar leaves</td>
<td>Tan</td>
</tr>
<tr>
<td>Yeast</td>
<td>Khaki</td>
</tr>
<tr>
<td>Canada thistle leaves, stems, flowers</td>
<td>Grey</td>
</tr>
<tr>
<td>Sunflowers</td>
<td>Greenish gold</td>
</tr>
<tr>
<td>Cattail</td>
<td>Beige</td>
</tr>
<tr>
<td>Sagebrush</td>
<td>Golden tan</td>
</tr>
<tr>
<td>Red cabbage</td>
<td>Blue</td>
</tr>
</tbody>
</table>
Activity 4: Weaving the Wool

1. Cut a rectangle piece of cardboard to your desired size. We used a 5" x 5" (12.7 cm x 12.7 cm) piece. This will become your loom.
2. Use scissors to cut 1/4" (.635 cm) slits 1/2" (1.27 cm) apart along two opposite ends of the cardboard (see Figure 1).
3. To create the warp on the loom, tape one end of the string to the back of the cardboard. Then string it through the first notch, around the front of the cardboard piece from top to bottom and into the opposite notch. Continue until all of the notches have been filled. Tape the second end of the string to the back of the cardboard (see Figures 2 and 3).
4. Tie several strands of the spun and pilled wool from activity one together to make one long piece.
5. Use the spinning hook from the wool spinning kit as your shed stick. A shed stick is a tool used to create a temporary separation between the warp yarns. Feed the shed stick over and under the warp with every second string being raised (see Figure 4).
6. Weave the yarn across the loom following the pattern of the shed stick. This yarn is known as the weft. To weave the second row, feed the shed stick in the opposite order under pattern from the previous row and follow the pattern with the yarn. Use the shed stick to gently push each row together. Repeat this process until the weaving is finished (see Figures 5 and 6).
7. When the weaving is finished, insert a twig or dowel above and below the woven piece. Detach the strings from the cardboard notches and tie the loose ends to the twigs. An extra piece of yarn can be tied to the top twig for hanging (see Figures 7 and 8).

Activity 5: Felted Wool Marbles

1. Separate the fibers from a 2" x 2" (5.08 cm x 5.08 cm) piece of dyed wool until you have a puff of wool.
2. Lightly and gently roll the wool in your hands to create a loose ball.
3. Dip the wool into warm, soapy water.
4. Roll the wool between your palms in a gentle but quick circular motion. Do not press or squeeze the wool.
5. Continue rolling until the wool starts to stick together and looks like felt. This should take about five minutes.
6. Allow the marble to dry.
Activity 6: Ziploc Felting

1. Cut a rectangular, flat piece of wool small enough to fit inside the resealable bag.
2. Create a design by layering dyed wool on top of the rectangular piece.
3. Place rectangular pieces of tulle on the top and bottom of the wool. This will help speed up the felting process.
4. Place the wool and tulle inside the bag.
5. Pour enough soapy water into the bag to completely saturate the wool.
6. Place the bag flat onto a towel.
7. Squeeze the excess water out of the bag by pressing with your hand from the bottom of the bag to the top.
8. Seal the bag and work the wool by poking and pounding with your hands from the outside of the bag until the wool becomes firm and felt-like.
9. After the wool has felted, remove it from the bag, discard the tulle, and gently rinse in water, alternating hot and cold.
10. Roll the felt in a towel to squeeze out any excess water. Lay flat to dry.

Author(s)
Debra Spielmaker and Lynn Wallin

Lessons Associated with this Resource
- A Common Thread: The Significance of Wool in Medieval England
- Baa, Ram, Ewe... Sheep Tales
- Bartering Through the Seasons
- From Wool to Wheel
Companion Resource

Hands-On With Wool

Spinning, dyeing, weaving, and felting wool can easily be done in the classroom. This activity provides instructions and a materials list, making it easy to prepare a hands-on wool project for your class. Wool processing is a topic that connects easily to lessons in history and science.

Materials

Activity 1: Spinning the Wool

- Carded wool 1¼" x 1¼" (6.35 mm x 35.56 cm), 1 per student
- Spinning hooks, 1 per student
  - Carded wool and spinning hooks are available for purchase in a Wool Spinning Kit

Activity 2: Kool-Aid Dye Method

- Wool; cut to one arm’s length
- 1 Tbsp vinegar (15 mL)
- 1 cup water (240 mL)
- Glass bowl
- Microwave
- Kool-Aid

Activity 3: Natural Dye Method

- Wool; cut to one arm’s length
- Natural plants for dyeing

Activity 4: Weaving the Wool

- Cardboard
- String
- Spun and plied wool
- Spinning hook from the Wool Spinning kit (see activity 1 materials)
Wool Spinning

$12.00

Write a Review

Availability:
in stock

Classroom kit:
Includes 15 feet of wool roving.

Quantity:

Add to Cart  Add to Wish list

Description

Grades K-12 (Kit)

Make social studies memorable with hands-on activities that involve students with the materials and techniques used for centuries to spin, dye, and felt wool. The kit contains 15 feet of wool top, 30 wool-spinning hooks, and instructions.

Click here to order more wool without spinning hooks.

For lessons plans associated with this activity visit the National Agriculture Curriculum Matrix.

Approved for College & Career Awareness
Group 1:
Flower Power (Lesson Plan)
Origami Flower Model (Activity)

From Chicken Little to Chicken Big (Lesson)
Chicken Genetics Matching Cards (Activity)

Group 2:
Corn An A-maizing Plant: Food, Fuel, and Plastic (Lesson Plan)
Living Necklace (Corn Seeds) (Activity)
Packing Peanuts (Activity)

Group 3:
DNA Expressions in Agriculture (Lesson Plan)
Strawberry DNA Necklace (Activity)

Peas in a Pod (Lesson Plan)
Pompom Punnett Squares (Activity)

Group 4:
Wheat Germ DNA (Lesson Plan)
Wheat Germ DNA Necklace (Activity)

King Cotton (Lesson Plan)
Ginning Cotton (Activity)

Group 5:
The Science of a GMO (Lesson Plan)
GM Soybean Seeds (Activity)

The Columbian Exchange of Old World and New World Foods (Lesson Plan)
World Fabric Map (Activity)

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