# Source Search

| Grade Level(s) | Estimated Time |
|---|---|
| K - 5 | 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 "Stores," "Factories," "Farms," and "Natural Resources"
- *Source Search Reference List*, 1 copy for the teacher

**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

**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.
- Mason jars were invented in 1858 for home canning purposes.

## 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 s 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, medicines, 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 a product 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.

## 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.


**Activity**

1. Divide the class into two teams. Divide the laminated pictures by color. You should have 20 pictures in each pile. If you are using red and blue index cards, you will have a red and blue team.
2. Take the students to the location of the relay race and place each team in a single file line. Be sure to have all the pictures face down in front of the first person in each line. Locate the tubs 20-50 feet away from the lines.
3. Give students the following instructions: "This is the source relay. Your job is to place each card in the tub representing the *original* source of the every day item that is pictured. When you are in the front of the line, pick up a card, look at the picture, then run to and place the picture in the correct tub based on the product's "source"– either "*Stores*," "*Factories*," "*Natural Resources*," or "*Farms*." Keep in mind that you are looking at the product, not the packaging. The next person in line goes when the person in front of them returns and crosses over the start line or hand-tags them. The returning player should go to the end of the line."
4. Ask students if they have any questions and clarify as needed. Begin the relay race and continue until all of the pictures have been sorted. The first team to finish the sort wins temporarily, but the ultimate winner will be determined by accuracy.
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.

**Enriching Activities (K-2)**

- Discuss the concept of needs versus wants. Ask the students to sort the items from the tubs according to whether they are needs or wants.
- Discuss the importance of conserving and managing natural resources.

**Enriching Activities (3-5)**

- Ask your students to create a concept web with one of the pictures used in the "Source Search" activity. Each picture should be place 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.

**Suggested Companion Resources**

- Farm Pop-Ups (Activity)
- From Farm to You Coloring Sheet (Activity)
- All in Just One Cookie (Book)
- Farming (Book)
- From Start to Finish Series (Book)
- Heartland (Book)
- Homes (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)
- About Farm Animals Mini Kit (Kit)
- About...Books (Kit)
- Animal Facts (Poster, Map, Infographic)
- What Is Agriculture? (Poster, Map, Infographic)
- Growing Today for Tomorrow (Multimedia)
- If It Weren't for Farmers (Multimedia)
- Learning by Leaps: Agriculture and You (Multimedia)
- Jr. Sprout - Communities and Help Wanted (Booklets & Readers)
- Into the Outdoors: Farm Science (Website)
- My American Farm (Website)

| Sources/Credits | Author(s) | Organization Affiliation |
|---|---|---|
| Activity adapted from Project Season, by Deborah Parrella. | Debra Spielmaker | Utah Agriculture in the Classroom |

**Source Search**

**Science:**

- **Kindergarten:**
  - Standard K.L.2: The student will demonstrate an understanding of organisms found in the environment and how these organisms depend on the environment to meet those needs.
  - Standard K.P.4: The student will demonstrate an understanding of the observable properties of matter.
- **First Grade:**
  - Standard 1.E.4: The student will demonstrate an understanding of the properties and uses of Earth's natural resources.
  - Standard 1.L.5: The student will demonstrate an understanding of how the structures of plants help them survive and grow in their environments.
- **Second Grade:**
  - Standard 2.L.5: The student will demonstrate an understanding of how the structures of animals help them survive and grow in their environments.
- **Third Grade:**
  - Standard 3.E.4: The student will demonstrate an understanding of the composition of Earth and the processes that shape features of Earth's surface.
- **Fourth Grade:**
  - Standard 4.L.5: The student will demonstrate an understanding of how the structural characteristics and traits of plants and animals allow them to survive, grow, and reproduce.
- **Fifth Grade:**
  - Standard 5.L.4: The student will demonstrate an understanding of relationships among biotic and abiotic factors within terrestrial and aquatic ecosystems.

**Social Studies:**

- **Kindergarten:**
  - Standard K-1: The student will demonstrate an understanding of his or her surroundings.
- **First Grade:**
  - Standard 1-1: The student will demonstrate an understanding of how families interact with their environment both locally and globally.
- **Second Grade:**
  - Standard 2-1: The student will demonstrate an understanding of the local community as well as the fact that geography influences not only the development of communities but also the interactions between people and the environment.
- **Third Grade:**
  - Standard 3-1: The student will demonstrate an understanding of places and regions in South Carolina and the role of human systems in the state.

## Source Search Item Reference List

*Use the following table for correct answers and explanations of each relay item.*

*Note that some products may be from more than one source or category. For example:*

- *Plastic can be made from coal, natural gas, minerals, or plants, but is most often derived from crude oil. Most plastics are a byproduct of oil which is extracted from beneath the Earth's surface.*
- *Glass is made by melting minerals together at a high temperature. Minerals are extracted from the ground through mining.*
- *Metals and steel come from minerals in the Earth's crust. They are extracted from the ground through mining.*
- *Food products may come from different types of farms.*

| Item | Sources | Description |
|---|---|---|
| **bandages** | natural resources | The backing, which makes up the majority of the bandage, is typically made from plastic. However, the pad in the middle of the bandage may be made of cotton (a farmed product). |
| **basketball** | farms or natural resources | Quality indoor basketballs are made of leather. Outdoor and less expensive basketballs are made from a synthetic petroleum-based rubber. |
| **blender** | natural resources | A blender is made from glass, plastic, and metal |
| **camera** | natural resources | Cameras are made from aluminum, stainless steel, plastic, and glass. |
| **candy** | farms | Chocolate comes from the beans of cacao trees grown on farms located in tropical rainforests. Sugar comes from the stems of sugarcane or the roots of sugar beets. The sugar found in most US products comes from sugar beets. |
| **car** | natural resources | Cars are made from steel, plastic, and glass. The tires are made from a synthetic petroleum-based rubber. |
| **cat food** | farms | Dry cat food is made from grains such as corn, wheat, barley, and rice and proteins like beef, chicken, and eggs. Vitamins are added and fat is sprayed onto the kibble. |
| **cereal** | farms | Cereal is primarily made from grains such as wheat, corn, rice, or oats. |
| **cheese** | farms | Cheese begins with milk from a dairy farm. The milk is pasteurized and bacteria is added. Rennet is added and the mixture is cooked and agitated into curds and whey. The curds are separated from the whey, molded, and soaked in a brine solution. The cheese may be aged before it is packaged. |
| **cell phone** | natural resources | A cell phone is made from plastic, glass, and metal. |
| **cookies** | farms | The ingredients needed to make chocolate chip cookies originate on the farm. The flour is made from wheat, the |

| Item | Sources | Description |
|---|---|---|
| | | sugar comes from sugar beets or sugarcane, and the chocolate chips come from the beans that grow in the pods of the cacao tree. |
| **eggs** | farms | Because the laying hens that produce commercially sold eggs are not kept in the same spaces as roosters, the chicken eggs sold in grocery stores are not fertilized eggs. A hen will lay one egg almost every day. |
| **fleece sweatshirt** | natural resources | Fleece is a synthetic polyester fiber made from petroleum extracted from beneath the Earth's surface. Plastic bottles are often recycled to make fleece. |
| **French fries** | farms | French fries are made from potatoes, a starchy tuberous stem that grows underground, that are peeled, cut, and fried in oil. |
| **fruit** | farms | Fruit grows on trees, vines, plants, or bushes. Fruit is the part of the flowering plant that contains the seeds. |
| **hamburger** | farms | All of the ingredients of a hamburger are grown or raised on a farm. The wheat for the bun, milk to make the cheese, beef for the patty, mustard, tomatoes, onions, and lettuce all begin on a farm. |
| **handbag** | farms or natural resources | Handbags, like the one pictured, can be made of leather or artificial leather. Animal hides (often cattle hides) are used to produce leather. Artificial leather, also known as pleather or leatherette, is made from a synthetic fiber (typically polyester) with a petroleum-based plastic coating (usually polyurethane or PVC). |
| **hot dogs** | farms | Hot dogs are made from finely ground trimmings of beef, pork, or poultry. |
| **ice cream** | farms | Ice cream is primarily made from cream, milk, and sugar. Cream and milk comes from dairy cows. Sugar comes from the stems of sugarcane or the roots of sugar beets. The sugar found in most US products comes from sugar beets. |
| **jeans** | farms | Jeans are made with denim fabric, a product made from cotton. Cotton is a soft, usually white fiber that grows in a boll around the seeds of a cotton plant. |
| **mayonnaise** | farms | Mayonnaise is traditionally made from eggs, oil, and vinegar. |
| **milk** | farms | The majority of fresh milk purchased in the US comes from cows raised on local dairy farms. |
| **pizza** | farms | The ingredients for pizza begin on the farm. Pizza dough is made from wheat, the sauce is made from tomatoes, and the cheese is made from milk. |
| **pocket knife** | natural resources | The pocket knife pictured is made from steel and plastic. |
| **popcorn** | farms | Popcorn is one of six varieties of corn. Each kernel of popcorn contains water stored inside soft starch. When the kernel is heated, the water expands and eventually bursts the kernel open. The starch becomes inflated and spills out to make the characteristic shape of popcorn. |

| Item | Sources | Description |
|---|---|---|
| **salad** | farms | The availability of certain produce items depends upon the growing season and the climate of a particular region. When there is a demand for fruits and vegetables that are out of season or that do not grow well in the climate of a particular region, produce will be transported in from the farms of another region or country. |
| **salt** | natural resources | Salt is a naturally recyclable mineral that is mined from salt deposits or harvested from salt water. |
| **shoes** | farms or natural resources | Shoes, like the pair pictured, can be made from leather or synthetic leather. Animal hides (often cattle hides) are used to produce leather. Synthetic leather, also known as pleather or leatherette, is made from a synthetic fiber (typically polyester) with a petroleum-based plastic coating (usually polyurethane or PVC). |
| **shrimp** | farms or natural resources | Shrimp can be either farm-raised or caught in the wild. |
| **sink** | natural resources | The sink pictured is made from stainless steel. |
| **soda** | natural resources | Carbonated water makes up about 89% of a typical full-calorie soft drink. About 10.4% of the drink is sugar and about .6% is made up of flavorings, coloring agents, sodium, caffeine, etc. Diet sodas can contain as much as 99% water. |
| **stairs** | farms | In the US, lumber comes from trees that are harvested from managed forests, also known as tree farms. |
| **tablet** | natural resources | Tablets are made from aluminum, glass, and plastic. |
| **toilet paper** | farms | Toilet paper comes from trees that are harvested from managed forests, also known as tree farms. |
| **tomato juice** | farms | Tomato juice is made from the pulp of ripe tomatoes. |
| **tomato sauce** | farms | Tomatoes are botanically a fruit because they are the part of a flowering plant that contains the seeds. However, culturally and from a culinary perspective they are considered a vegetable. Either way, tomatoes are farmed. |
| **watch** | natural resources | Watches are made from plastic, metal, and glass. |
| **water** | natural resources | Water covers about 71% of the Earth's surface, but only about 2.5% is fresh water. |
| **wheat bread** | farms | The main ingredient in wheat bread is wheat flour, which is ground from the seeds of the wheat plant. The whole kernel is used to make the flour used in whole wheat bread. For white bread, the bran and germ is separated out and only the endosperm of the kernel is used to make the flour. |
| **wool coat** | farms | Wool is a fiber that comes from sheep. Sheep are sheared in early spring. The wool is combed, cleaned, and carded before it is ready to be spun into yarn. |


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Technologiquement Avancé
• Stays on Better. Heals Faster.
• Reste mieux en place. Accélère la guérison.
10
REGULAR/ ORDINAIRES


POP
CORN


CAT FOOD
Cat Chow
HEALTHY WEIGHT
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PROVIDES ALL 25 essential vitamins & minerals
3000 DOUBLE POINT BAG
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satisfying and high in fiber
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