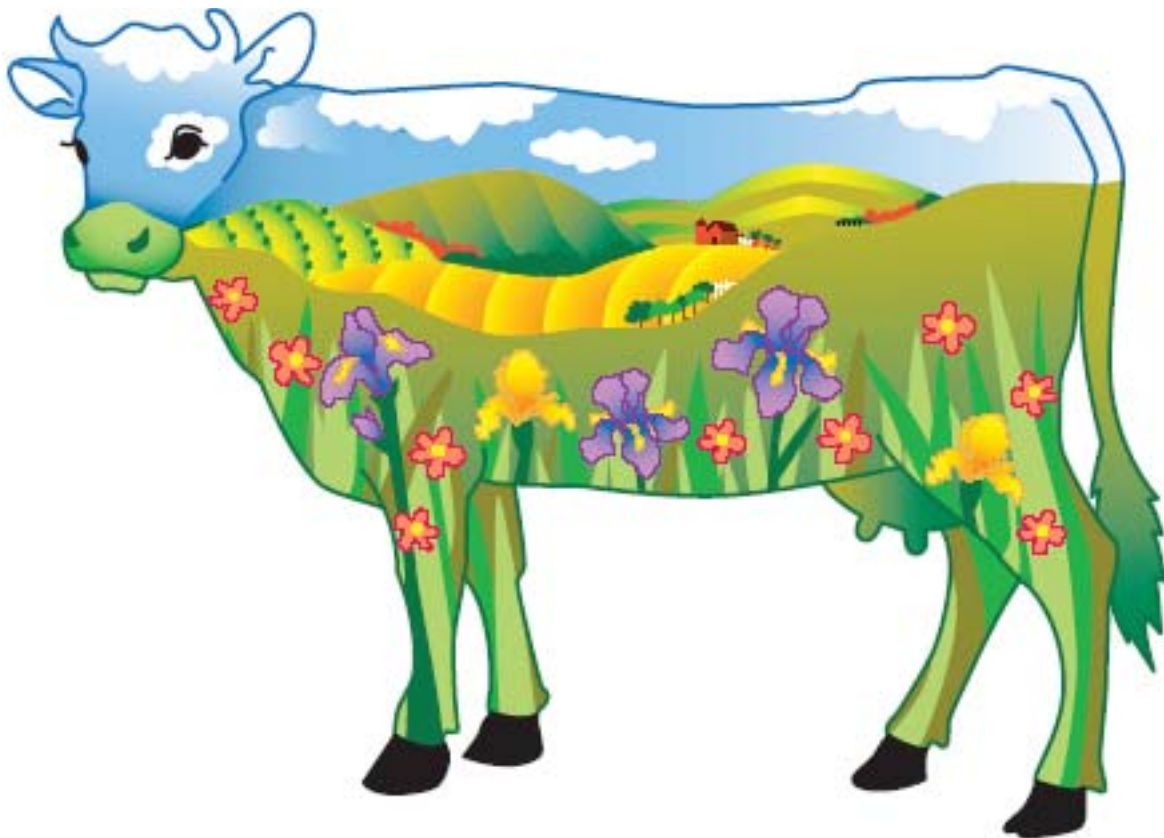


SOLE
Sciences of Life Explorations:
Through Agriculture
Grades 4 and 5



Teacher Guide
Unit: Let's Explore Agriculture

UNIT PLAN

UNIT TITLE

Let's Explore Agriculture

MONTH

September

GOAL

Students will understand Food and Fiber Systems of farming through activities targeting plants, animals, and the globalization of agriculture.

OBJECTIVES

Students will:

1. Define agriculture in terms of: (a) plant and animal products, (b) differences of scale, (c) importance to urban communities and rural ones, (d) climate and geography, and (e) the world's population for food and related products.
2. Draw a timeline for the production of a crop (NYS Learning Standard 1: Language for Information and Understanding Elementary 2; Food & Fiber Systems Literacy: Understanding, 2-3).
3. Explain agricultural terms in simple conversation with peers and adults, demonstrating comprehension of the language (NYS Learning Standard 1: Communication Skills, Checkpoint A, Modern Languages).
4. Describe common themes by saving and storing seeds from garden produce in an extended science project (NYS Learning Standard Interdisciplinary Problem Solving, Elementary 2 Strategy).
5. Explain how people involved in agriculture and related careers live, work, and utilize natural resources (NYS Learning Standard 3: Geography, Elementary 1).
6. Describe for whom agricultural goods and services are produced (NYS Learning Standard 4: Economics, Elementary 1).
7. Explain how resources such as water and land are shared by households, businesses, and agriculture, and describe examples of multiple uses for land and water resources (Food & Fiber Systems Literacy: Understanding, 2-3; History, Geography, and Culture, 4-5).
8. Explain how traders, explorers, and colonists brought plants and animals to this country and locate the origins of different plants and animals (Food & Fiber Systems Literacy: Understanding, 4-5).
9. Describe how the desire to obtain exotic foods and spices, and precious gems and minerals, motivated European exploration (Food & Fiber Systems Literacy: History, Geography, and Culture, 4-5).
10. Define agribusiness and give examples of agribusinesses in the community (Food & Fiber Systems Literacy: Business and Economics, 4-5).
11. Describe ways of processing foodstuffs for people and animals (Food & Fiber Systems Literacy: Food, Nutrition, and Health, 4-5).

TERMS

These terms are highlighted in bold throughout the lesson pages.

acre - a unit of measurement for land. Just over 43,000 square feet (this is about the size of the playing field for American football)

agriculture - the science, art, and business of farming: cultivating land, raising crops, and feeding, breeding, and raising livestock

climate - the weather in a location over a long period of time

diverse - many things that are different from one another

environment - the surroundings that affect an organism and its community

Europeans - people living on the continent of Europe

exports - products that are sold outside of the country

farmer - a person who make a living raising animals or food crops

forester - a person who work with trees

gardener - a person who grow smaller crops than farmers, often just enough for their family to eat.

geography - the study of the Earth's surface

global - worldwide, involving many countries

imports - products that are shipped into the country

ingredients - parts of a mixture

lab - (short for "laboratory") the place where scientists work and do their research

livestock - animals that are raised to sell

lumber - wood that has been cut from trees to be used by builders

products - anything that is created, often to sell

ranchers - people who raise livestock to sell.

Integrated Pest Management is a specialized form of environmental management wherein scientific research and real-world application work together to reduce pests such as insects, diseases or weeds.

- 1. Properly identify pests*
- 2. Learn the pest/host biology*
- 3. Sample the environment for pests*
- 4. Determine an action threshold*
- 5. Choose the best tactic*
- 6. Evaluate results*

SAFETY

Instructions should be given for safe handling of knives.

Standards Matrix for this Lesson:

Standards:										
Month	Unit	Math/Science/and Technology	English Language Arts	Social Studies	HEALTH	ARTS	Food & Fiber Literacy	CDOS	Other Languages	Interconnectedness
9	Let's Explore Agriculture	7:13, e2	1:3, e2	3:16, e1			I B 2-3			
		3:16, e1	4:5, i1	4:17, e1			I D 2-3			
			1: 6A				I D 4-5			
							II B 4-5			
							II D 4-5			
							IV A 4-5			

Matrix Key:

NYS Learning Standards arranged by Standard: Category, Level

e = elementary i = intermediate

Categories:

- | | |
|-------------------------------------------------|----------------------------------------|
| 1 Career Development | 11 Technology |
| 2 Universal Foundation Skills | 12 Interconnectedness: Common Themes |
| 3 Language for Information and Understanding | 13 Interdisciplinary Problem Solving |
| 4 Language for Literary Response and Expression | 14 History of the United States and NY |
| 5 Language for Social Interaction | 15 World History |
| 6 Communication Skills | 16 Geography |
| 7 Analysis, Inquiry, and Design | 17 Economics |
| 8 Information Systems | |
| 9 Mathematics | |
| 10 Science | |

ADDITIONAL RESOURCES

<http://www.agclassroom.org/kids/stats/newyork.pdf>

SUPPLIES AND EQUIPMENT

Globe or map (optional)

Markers or crayons

BACKGROUND FOR TEACHERS

In this lesson, students will learn about agriculture. Relatively few students live on working farms these days. Some may have been exposed to agriculture, but most have little knowledge or understanding of the agricultural industry and the way it touches our lives every day. This is an introduction; subsequent lessons will explore subjects further. Upon completion of this lesson, students should be able to recognize the link between plant and animal production on the farm and the end products they use every day. They will learn that agriculture happens around the world and varies because of climates and conditions. They should start to understand that some products can be grown or raised locally, but many are shipped to us from other areas.

Students should begin to understand that agriculture takes a lot of hard work, and is susceptible to a variety of environmental and soil conditions. They will begin to appreciate the satisfaction gained from working with the land and producing necessary products for others.

Agriculture has been described as the coming together of science and art. The science can be seen in plant propagation - the process of artificially or naturally distributing or spreading plants, such as through grafting, cutting, and hydroponics. When asked, most students who recognize the word will tell you it has to do with being a farmer.

In the United States today, agriculture has shifted from most people farming and raising their own foods, to fewer, large industrial farms. However, that trend is changing again.

No matter where we live, we are almost completely dependent on agriculture for our foods, as well as much of our textiles and building products, medicines, and some of our technology. When students realize the scope of agriculture, we hope they see it is an important part of their lives.

Agriculture is more than just food and animal production because its success depends on properly caring for the environment. Because it is so basic and yet diverse, it is a perfect platform for teaching science. After all, science is not just for experiments in the laboratory, but is also the quest to understand and interact responsibly with our environment.

Refer to the page "A Look at New York Agriculture" at the end of the lesson for more information.

QUESTIONS FOR STUDENTS

What is agriculture?

How is agriculture important in your life?

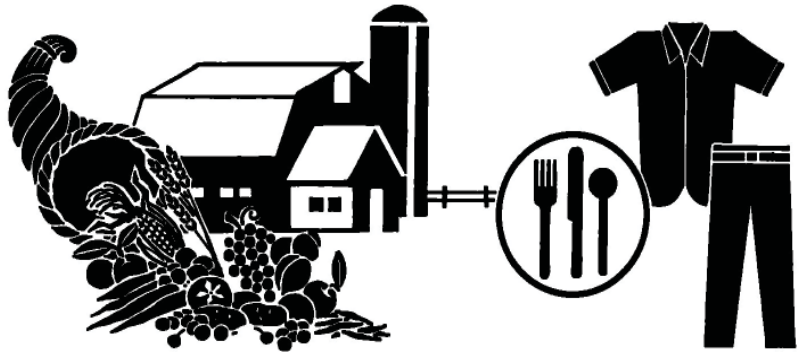
Where does the grocery store get its food products?

What are farmers, ranchers and gardeners?

Is there more to agriculture than just growing food?

INTEREST APPROACH ACTIVITIES

From Farm to Table



Part A: The Journey from Seed to Table

Time: 20-25 minutes

Materials:

Vegetables
Water source
Paper towels

1. Bring in several samples of produce from your garden, a farm stand, or the store (tomatoes, squash, cucumbers, etc.).
2. Wash the vegetables and place on a table. Cut each one open and pull out a few seeds for students to examine. Place the seeds from each vegetable in a separate dish and set aside.
3. Allow students to sample each vegetable. Ask them which ones they liked or didn't like, and why.
4. Discuss the path of each vegetable from seed to table by making a cluster map on a chalkboard, overhead, or paper. (See sample of cluster map on the next page.)
5. When the discussion is over, tell the students that you are now going to save the seeds you just cut out of the vegetables. Extract the pulp and dry seeds on paper towels. Once dried, store in containers at cool temperature, above 32°F. They can be planted for next year's garden or in-class project.
6. Save the cluster map for review in Part B.

Part B: Expanding the Clusters: Transferring Knowledge

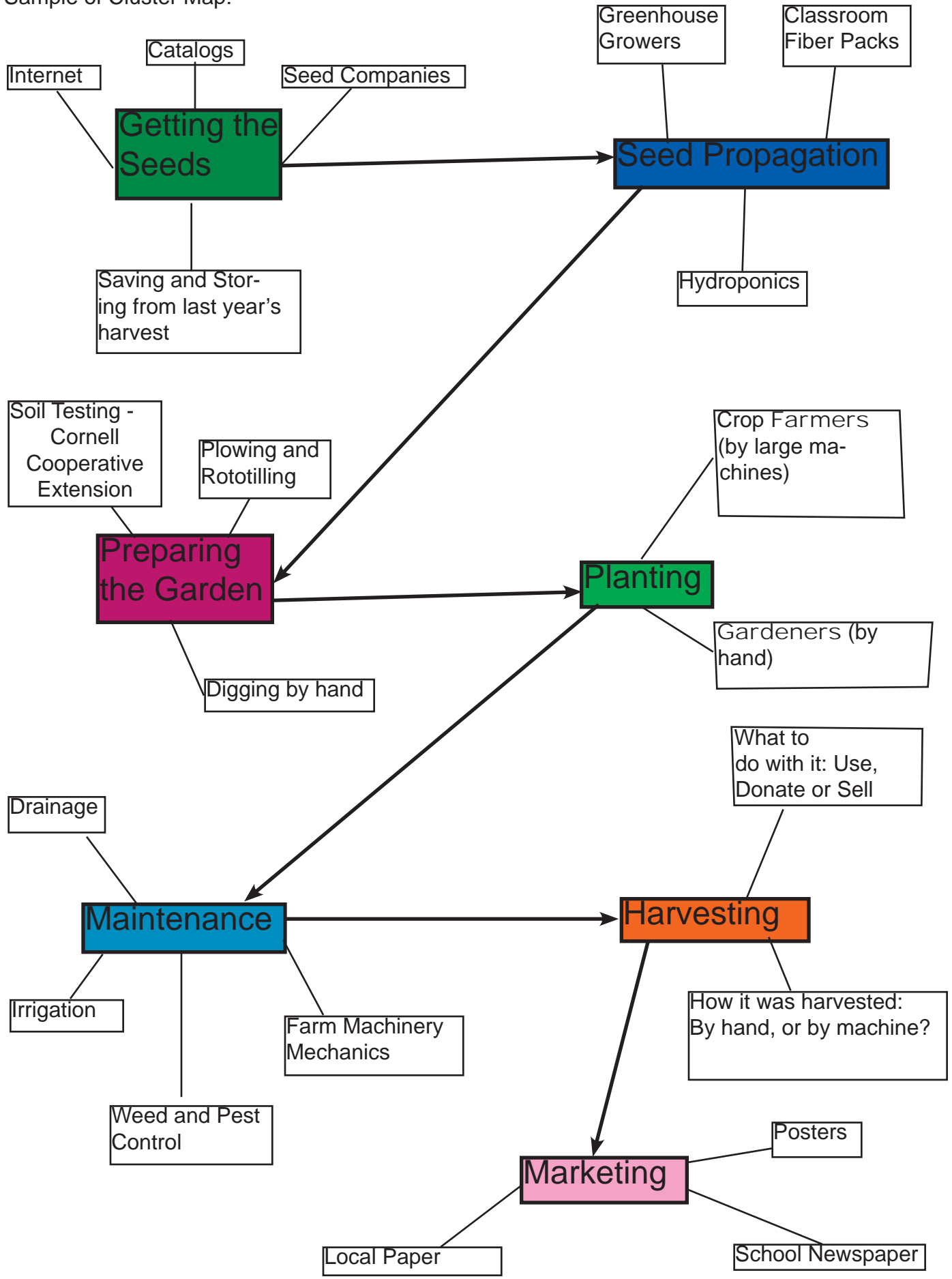
Time: 20-25 minutes

1. Ask students to look over the cluster map.
2. Guide students through a discussion about the journey from seed to table.

Suggested questions:

- a. What equipment would a farmer growing a large crop use to plant several hundred acres (tractors, plows, combines, tillers, sprayers, reapers, etc)?
- b. What services would he or she need if serious mechanical problems developed with the equipment?
- c. What marketing methods would a farmer with a large crop use to sell his produce?
- d. Point out on the cluster map where you think farmers *spend* their money. Where do they *make* money?
- e. What methods could a farmer use to prevent wildlife such as birds, deer, and woodchucks from causing serious damage to his harvest?

Sample of Cluster Map:



Interview a Guest Speaker

The agribusiness community will be directly involved in this project. There are two options:

Option 1

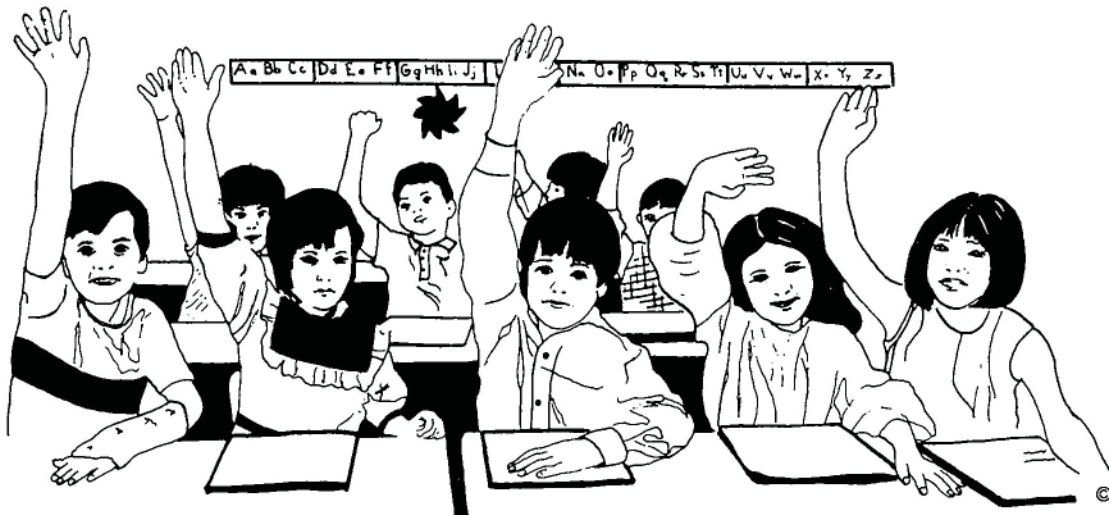
- a. Students could look at the cluster map as a class and decide what part of the agricultural industry they would like a guest speaker for (e.g. mechanics, crop farming, trucking, seed company, Cooperative Extension, or garden center).
- b. Teachers should invite one or two members of the agribusiness community, related to the into the classroom.
- c. Students will ask prepared questions and write down the answers given by the speaker.
- d. A direct connection will be made between the class and the agricultural community. This connection may help in the future when planning a career day.

Option 2

- a. If option 1 is not possible, students will pick a part of the industry to research and report on from the cluster map discussion.
- b. On the Internet or in the library, look up information pertaining to the topic of choice.
- c. Organize the information into a report of 2-3 pages.
- d. Reports could be presented orally as a supplemental exercise.
- e. Find appropriate pictures online or in magazines and make a collage.

Sample Interview Questions:

1. Name of Business:
2. Who are the owner(s) of the business?
3. What services does this business provide for agriculture?
4. When did the business begin?
5. How did you choose to get into this business?
6. What level of education did you receive?
7. What has been the most challenging part of owning this business? The most rewarding?
8. Other questions generated by brainstorming in class.



SUMMARY OF CONTENT

- I. Agriculture: what is it?
 - A. Broad definition includes:
 - i. Food
 - ii. Medicine
 - iii. Technology
 - C. Small or large farms

- II. Agriculture: what is it?
 - A. Provides six pictures of various agricultural activities and space for students to describe the activities
 - B. Definition of terms:
 - i. Livestock
 - ii. Acre

- III. Where does the store get its food products from? (2 Pages)
 - A. What about the pioneers?
 - i. Europeans
 - a. Where did early settlers in this region get their food products?
 - ii. Cinnamon cookie recipe:
 - a. Where do the ingredients for cinnamon cookies come from?

- IV. Agriculture Alphabet
 - A. Students are asked to come up with one agriculture word for each letter of the alphabet.

TEACHING-LEARNING ACTIVITIES

- I. Agriculture: What is it?
 - A. Ask students to define agriculture in their own words, to gauge their knowledge or experience with this industry.
 - B. Bring in examples of agricultural products and ask students how each one is considered a part of agriculture.
 - i. How often do they use (or eat) this item?

- II. Describe agriculture (2 Pages)
 - A. Answer each essential question
 - B. Describe the photo activity.

- III. Where does the store get its food products from? (2 Pages)
 - A. Global food
 - B. Have each student draw one or two agricultural products.
 - C. Have students place a pin in a world map, where each product is grown.
 - B. Bake cookies
 1. Arrange with the cafeteria staff to use the school kitchen.
 2. Students will make the recipe with teacher supervision.
 3. As you add each ingredient, talk about where the product was originally grown, how it got to the United States, and if settlers in the eighteenth and nineteenth centuries could have gotten it.

- IV. Agriculture Alphabet
 - A. Read the directions as a class
 - B. Have students work in pairs
 - C. Review the answers as a class

SUMMARY OF CONTENT.

- V. Farmers, Ranchers, and Gardeners
 - A. Describes the differences between farmers, ranchers, and gardeners.

- VI. More to agriculture than just growing food!
 - A. Foresters
 - B. Lumber
 - C. Products
 - D. Environment

- VII. Test Your Knowledge
 - A. Contains a set of review question covering the key concepts

- VIII. Vocabulary
 - A. Provided for Student reference

TEACHING-LEARNING ACTIVITIES

- V. Farmers, Ranchers, and Gardeners
 - A. Find a book or video describing one of the major foods of the world, such as rice
 - B. What types of agriculture are practiced in Africa, South America, and Asia?
 - C. Ask students about their personal and family connections to agriculture (including previous generations)
 - D. Ag Alphabet worksheet
 - E. Cluster map the Ag Alphabet

- VI. More to agriculture than just growing food!
 - A. Discuss why we couldn't live without agriculture.

- VII. Test Your Knowledge
 - A. Student should complete this page individually
 - B. This page can serve as a review or as a quiz grade.

- VIII. Vocabulary
 - A. Provided for Student reference

name _____

Student Lesson: Let's Explore Agriculture Agriculture? What is it?

How is agriculture important in your life?
Where does the grocery store get food products?
What are farmers, ranchers, and gardeners?
Is there more to agriculture than just growing food?

Agriculture is the word we use to describe raising food crops or other products from nature. It can mean fruits, vegetables, grains, wood, clothing fibers and more. It can also mean raising livestock. People who live on small plots of land can do agriculture as well as those who live on hundreds of acres of land.

Agriculture happens all around the world. In the United States we call most people who work in agriculture farmers or ranchers. They may raise wheat, corn, cattle, sheep, or many other things.

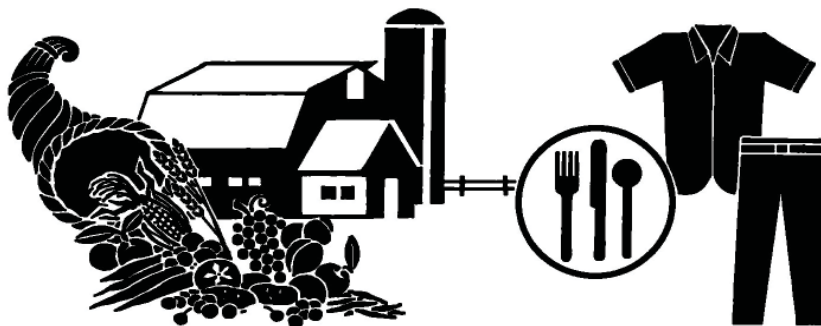
Agriculture is primarily food products, but also provides many products for medicine, industry and technology.

For example, some people raise cotton or tobacco. Are they food products? No, but they are still agricultural products.

Agriculture may not seem very important to you, because you are busy going to school and doing things at home. You may get your food from the store instead of from a farm. You may live in the country, in the suburbs (area outside a city), in a small town, or in the city. Many of you may have only visited a farm, and never spent much time there. Some of you might never have even seen a farm!

So, why is agriculture important in your life? As you complete the activities on these pages and all the lessons that follow, you will learn that agriculture is very important to everybody.

Remember, all the foods your family buys at the store have started out as a crop or animal that someone raised. It sounds like a lot of work, and it is. But agriculture can also be interesting and enjoyable.



name _____

Student Lesson: Let's Explore Agriculture

Describe Agriculture

Write a complete sentence to describe the agriculture in each photograph.







name _____

Student Lesson: Let's Explore Agriculture

Describe Agriculture

Write a complete sentence to describe the agriculture in each photograph.







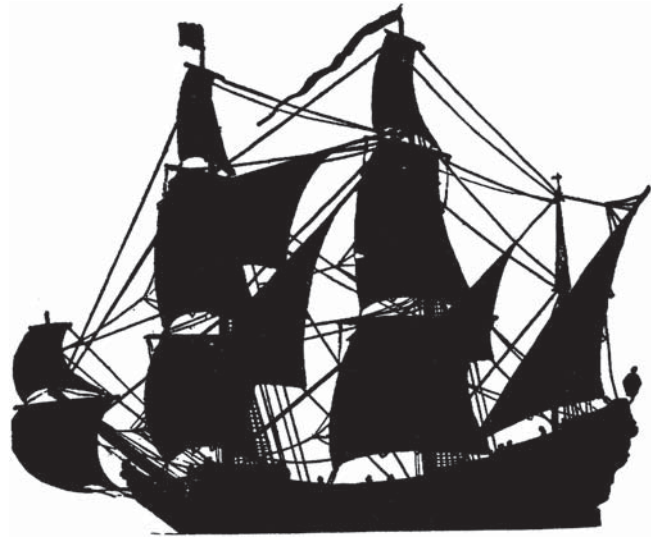
Student Lesson: Let's Explore Agriculture

Where does the store get its food products from?

Many years ago, people grew their own fruits and vegetables and grains, and also raised their own livestock for food. They did not have the variety of foods we do now because it was difficult to get foods that only grew far away.

Long before people traveled the world by airplanes, long-distance travel by water. Explorers would go out to sea and come back with strange spices and foods from faraway lands. Can you imagine the first time Europeans saw a pineapple (which doesn't grow in Europe), or tasted cinnamon?

Not all foods can be raised everywhere because soils, temperatures, and the supply of fresh water are different all around the world. Can you think of one or two things you like to eat that can't be grown in New York State?



1. _____

2. _____



Could the early American pioneers make cinnamon cookies just from what they raised on their farms?

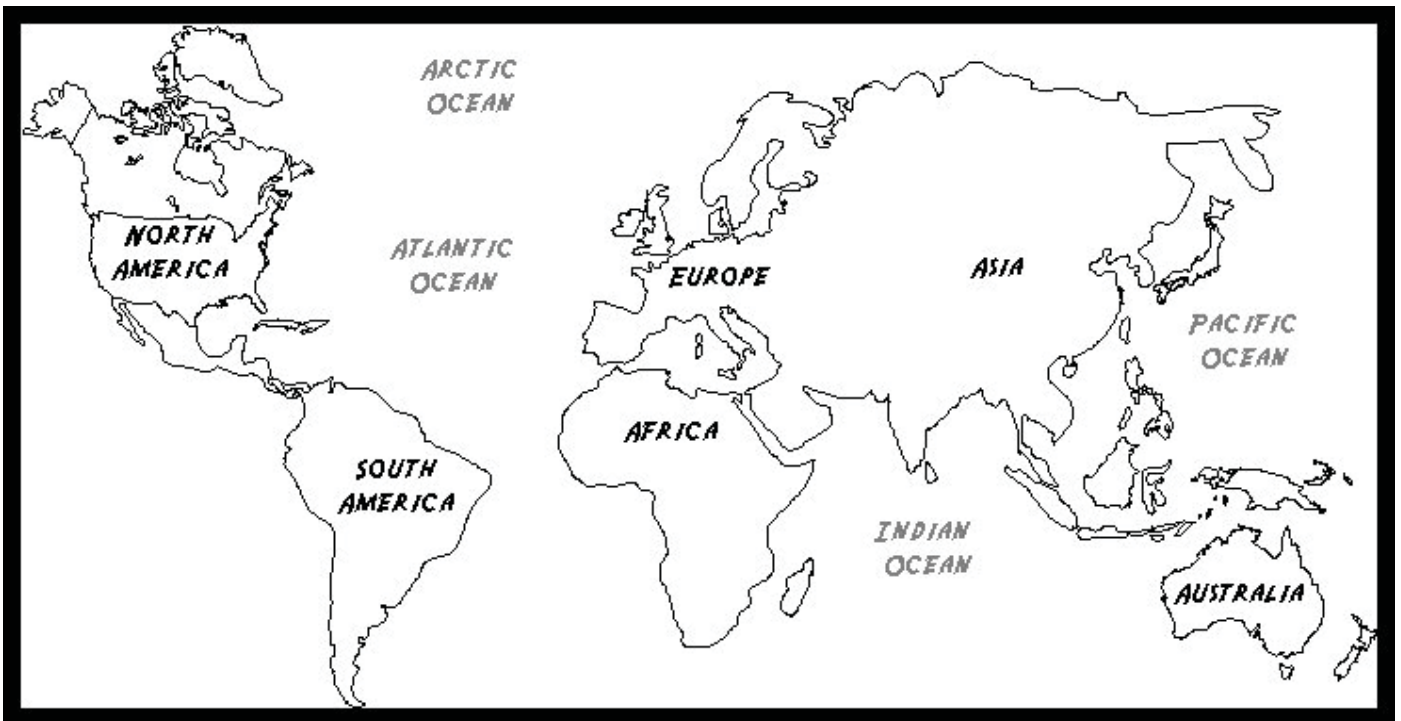
Let's find out! They would need: flour, baking soda, sugar, cinnamon, eggs, vanilla, salt, and butter. Out of these eight ingredients, how many do you think they could raise on their farm? Which ones?

Student Lesson: Let's Explore Agriculture

Where does the store gets its food products from?

Look where the ingredients for our cinnamon cookies come from!

Vanilla.....	Mexico
Butter.....	United States
Eggs.....	United States
Flour.....	United States
Cinnamon.....	India
Salt.....	United States
Baking soda.....	United States
Sugar.....	South America



Our pioneer gardeners would not have been able to grow all they needed to make cinnamon cookies. They could get *some* things from the store, but at times things were not available. Cinnamon came from India (part of Asia). To get to New York State, cinnamon would come across the oceans to the port of New York City, and be put on small merchant boats to travel up the rivers. Eventually it would go on a wagon and travel slowly over land to get to a general store. Because of all the work it took to get spices, they were expensive. A cinnamon cookie would be a real treat!

Spices still come from all across the world. Farmers who harvest cinnamon may not be able to grow wheat where they live, so they may have to have flour shipped in.

Student Lesson: Let's Explore a Farmers, Ranchers and Gardeners

Gardeners and farmers may raise the same crops, so why do they have different names?

Gardeners usually only grow enough of a crop for their family and friends to eat. They may give some away or sell it at a farm stand or farmers' market. Most gardeners raise crops because they like fresh produce or because they enjoy gardening. They usually have other jobs, and buy a lot of their foods.

A farmer is someone who raises a large crop and sells most of it. He or she makes a living being a farmer. He may grow only one crop, like cabbage. No one wants to live on **just** cabbage even if it was healthy to! So, he probably has a garden for other vegetables, and will buy other food at the store.

Ranchers are also farmers, but they raise animals to sell. These animals are called livestock. Raising livestock is part of agriculture, too.

People all around the world are farmers, ranchers and gardeners. In many countries, people have to farm to feed their families

Think of one agriculture word for each letter of the alphabet. We've done a few of them to help you get started! Agriculture words can be anything related to plants, animals, soil, insects, farming, and eating!



My Agriculture Alphabet



A _____	N _____
B _____	O _____
C _____	P _____
D _____	Q <i>Quince (an Asian fruit)</i>
E _____	R _____
F _____	S _____
G _____	T _____
H _____	U _____
I _____	V _____
J _____	W _____
K _____	X <i>Xylem (the part of a plant water moves through)</i>
L _____	Y _____
M _____	Z <i>Zinnia (a kind of flower)</i>

Student Lesson: Let's Explore Agriculture

Is there more to agriculture than just the work of growing food?

Agriculture can be one person working in a small garden, or hundreds of people running machinery on a thousand-acre farm. In both cases, success comes from understanding the climate, the other living creatures in the environment, how to take care of the soil and water, and how plants grow. Agriculture can be foresters raising lumber or even fish farmers raising fish in ponds!



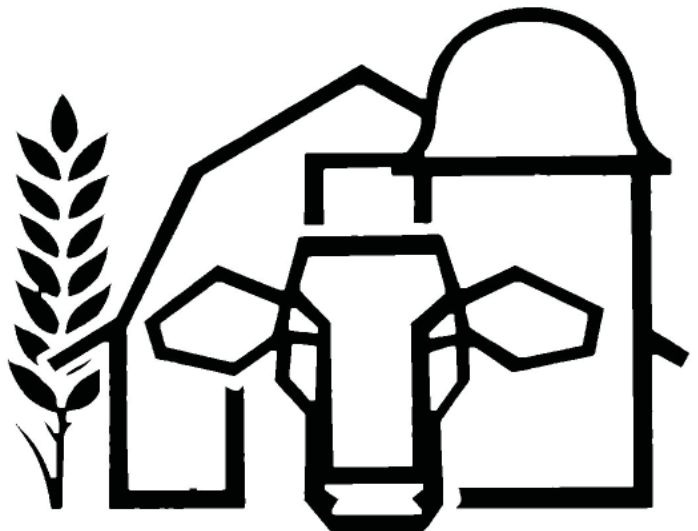
Not many of us could survive without agriculture. It gives us food, clothing, shelter, medicines and products used in science and industry. Try to think of someone who does *not* use agriculture!

One of the best parts about studying agriculture is learning about the Earth and how to use its resources wisely. Some students have had the chance to grow something in a garden, or spend some time on a farm or ranch, but a lot of students today have not.

Working with the soil, getting exercise and fresh air, and seeing something grow because you made it possible, all feel great! We all need food, clothing and shelter to survive. Agriculture is the science of growing and raising these products... and a lot more!

As you learn more about what agriculture is, you'll see what an important part of your life it is, even when you don't see it everyday. As you learn about soil, the water system, insects, and plants and animals, you will be learning about our environment and how to care for it.

To care for our environment, you must have knowledge of how it works. The best way to do that is to get out there and experience it first-hand. So get ready to dig in!



name _____

Student Lesson: Let's Explore Agriculture:
Test Your Knowledge

1. Agriculture is the word for farming and raising crops and animals

____yes

____no

2. Before it was easy for people to travel, they usually only ate foods grown near them

____yes

____no

3. Name two products grown in another country that we can buy at a store

4. Write about one way agriculture affects your life. Try to choose something you didn't know, or didn't think about very much, before this lesson.

Student Lesson: Let's Explore Agriculture: Vocabulary

acre - a unit of measurement for land. Just over 43,000 square feet (this is about the size of the playing field for American football)

agriculture - the science, art, and business of farming: cultivating land, raising crops, and feeding, breeding, and raising livestock

climate - the weather in a location over a long period of time

diverse - many things that are different from one another

environment - the surroundings that affect an organism and its community

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exports - products that are sold outside of the country

farmer - a person who make a living raising animals or food crops

forester - a person who work with trees

gardener - a person who grow smaller crops than farmers, often just enough for their family to eat.

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global - worldwide, involving many countries

imports - products that are shipped into the country

ingredients - parts of a mixture

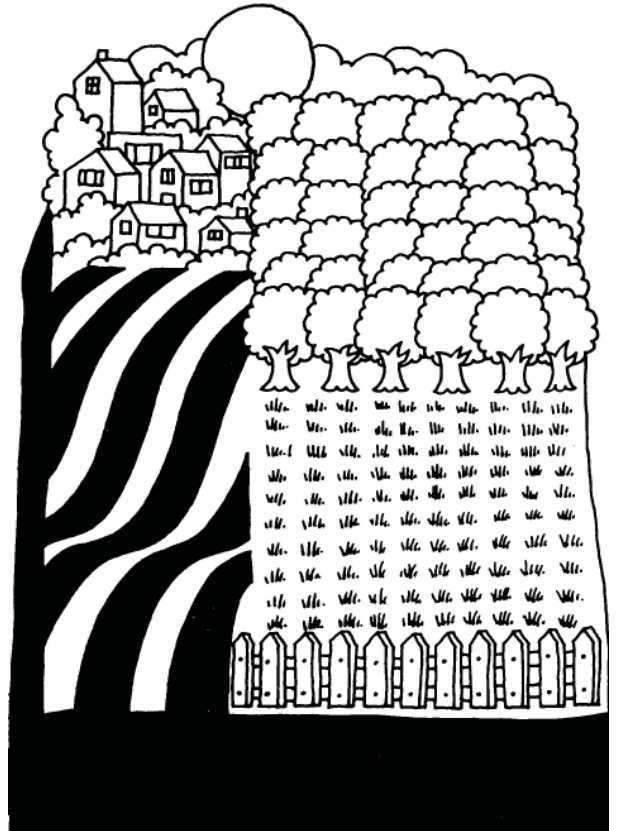
lab - (short for "laboratory") the place where scientists work and do their research

livestock - animals that are raised to sell

lumber - wood that has been cut from trees to be used by builders

products - anything that is created, often to sell

ranchers - people who raise livestock to sell.



Integrated Pest Management is a specialized form of environmental management wherein scientific research and real-world application work together to reduce pests such as insects, diseases or weeds.

1. Properly identify pests

2. Learn the pest/host biology

3. Sample the environment for pests

4. Determine an action threshold

5. Choose the best tactic

6. Evaluate results

Teacher Information for Student Worksheets

Student Worksheet 1

Agriculture: What is it?

Traditional agriculture means the science of growing food. However, agriculture today includes a wide variety of products beyond food, such as medicines or technology . They are all based on the science of raising or growing a product. Agriculture is as old as the first person who purposely cultivated a plant for food. It is as small as a patio pot of tomatoes or as large as a huge industrial farming facility. Agriculture can seem to go on almost unnoticed in some of our neighborhoods and cities.

Optional Activities:

- A. After discussing the products in the illustrations, ask students to explain in their own words at agriculture is.
- B. Bring in a few agricultural products to show the class and ask the students how each one is considered a product of agriculture. Ask them how often they use or eat each product.
- C. Discuss the essential questions in a large-group setting. They represent readings and activities to follow which will reinforce each idea

Student Worksheet 2-A

Describe Agriculture

Direct your students as you desire in this writing activity.

photo 1: Farm workers plant small plants (transplants) on a large farm with mechanical assistance

photo 2: Storage buildings - silos - are generally storing grain for feed

photo 3: This woman is selling fruit in Central or South America; remind students that bananas are a tropical fruit and before quick transportation evolved, would not be available in the northeast United States.

Student Worksheet 2-B

Describe Agriculture

Photo 1: Calf-judging (evaluation of how well the calf meets the qualities and physical features of the breed) or calf auction

Photo 2: Large fields of crops. Corn is easily grown in many areas of the US.

Photo 3: Hay or straw is mechanically baled for storage.

FYI: Hay is generally a crop grown specifically as a food for livestock. Straw is generally the secondary use of the stems leftover after a grain crop is harvested. Hay is used for food; straw is used for bedding.

Student Worksheet 3-A

Where does the store gets its food products from?

“Run down to the corner store and get me some....” We take for granted that the store will have what we need or want. It is hard for any of us to imagine the limited foods a colonial or pioneer family would have, compared to what we use! Instead of merely having students list products that cannot be grown in New York State, have each student draw one or two items (ex: pinapples, oranges, bananas) on a sheet of paper. Obtain a world map and have students put each product on the map where it is grown. Discuss why it is grown there rather than in NYS.

This will tie in a lesson in geography and climate. OR Bake some Cinnamon Cookies in your cafeteria, and discuss each ingredient as it is added. Why wouldn't the pioneers be able to make Cinnamon Cookies? Suggestion: Make half of the batch with cinnamon and half without, allowing students to taste both and understand how excited the Europeans may have been about getting a spice like cinnamon!

Answers:

Three; Only flour (wheat), eggs and butter. All other products would have to be bought at a store. Cinnamon and Vanilla came from outside of the United States and would be expensive luxuries for some.

Student Worksheet 3-B

Where did the ingredients for the cookies come from?

Not only land acquisition and dreams of golds and riches, but the desire for foodstuffs such as teas and spices drove global exploration for the European empires. With each climate and geography around the world comes new fruits, vegetables, grains, meats, herbs and spices. Our modern American diet is based on our immigrant history. Before the invention of the car and interstate roads, few people ate foods outside of their ethnic background! This map exercise can be supplemented with the use of a wall map or globe and tied into the ways in which the Erie Canal increased trade around New York State.

Activity: Have the students color each part of the map where the products listed are grown.

Student Worksheet 4

Agriculture Alphabet

You may want to assign this as a take-home project or give students an opportunity to work on their own or in pairs, and then come together as a class to compare notes. Dictionaries can be used, and are good tools to help students develop their skills.

Activity: After collecting this worksheet from the students, create a cluster map for each letter. This activity may be done slowly throughout a few weeks, or done in one day. Hang the alphabet around the room.

Student Worksheet 5

Is there more to agriculture than just the work of growing food?

In conclusion, students should have increased their awareness of agriculture. Highlight the essential questions when discussing this with students. In the coming lessons, students will have a chance to learn about a wide range of topics involved in agriculture. Remind them that agriculture is based on using the earth wisely, and that science is just another word for learning how things work. It is our hope that the next generations regain their interest in the sciences, and use that knowledge to protect and enhance their environment.

Answer:

1. One example is an Inuit or American Eskimo. Although Eskimos today have access to stores and television and the 'American lifestyle', remote groups still live almost entirely on what they harvest (but do not raise or grow) from the sea and ice.

Student Worksheet 6

Test Your Knowledge

Vocabulary is provided for student reference. Students should answer the review questions individually

Student Worksheet 7

Review and Vocabulary

Lesson Supplements

A Look at New York Agriculture



New York

Capital: Albany
Population: 19,254,630
Founded: July 26, 1788 (11th state)
State Fruit: Apple
State Animal: Beaver
State Fish: Trout
State Tree: Sugar Maple
Number of Counties: 62
Largest City: New York City Population: 8,008,278
Nickname: The Empire State
Area: 54,475 square miles

Climate



- New York has a temperate climate with annual precipitation of 47" per year.
- The temperature ranges between 106°F and -11°F, but the Atlantic Ocean tends to moderate weather extremes in the city.

Soil



- State Soil: Honeoye
- The soils in the state fall generally into the groups classified as spodosols. They are acid in reaction and generally light in both color and texture. They are not superior agricultural soils, but because of the proximity of New York's agricultural areas to its heavily populated consuming centers, many of the better soils are intensively cultivated.

General



- Agriculture is important to New York State.
- Agricultural production returned over \$3.6 billion to the farm economy in 2004.
- About 25 percent of the state's land area, or 7.6 million acres, are used by the 36,000 farms to produce a very diverse array of food products.

Crops



- Fruit - New York's fruit crops were valued at \$216 million in 2004. Apples and Grapes lead New York fruit crops in value.
- Vegetables - The value of vegetables totaled \$470 million in 2004. Fresh Market vegetables rank 6th and processing vegetables are 7th among all states. Leading crops in New York are Cabbage, Sweet Corn and Onions.
- Field Crops - New York produces a variety of field crops largely in support of its dairy industry. Corn, oats and wheat are most widely grown with soybeans steadily increasing importance. New York ranks 3rd in corn silage, valued at \$208 million. Production of grain corn ranked 20th with a value of \$146 million. Soybean production was valued at \$34.5 million. The state placed 10th in oat production, 31st in wheat, and 27th for soybeans. Hay production put New York 24th and was valued at \$327 million in 2004. Most hay is used on farms and its value is realized through sale of milk and livestock. Fall potatoes reached a value of \$41.7 million in 2004 and made New York the 14th leading producer.

Animals



- Dairy Milk is New York's leading agricultural product and is produced all across the state. Milk sales account for over one-half of total agricultural receipts. Production in 2004 was 11.7 billion pounds, with a value of \$1.95 billion. New York is the nation's 3rd leading producer, and Wyoming is the State's leading county.
- Livestock - Dairy and animal production in New York provided nearly \$2.30 billion to farmers in 2004. That accounts for 63% of all cash receipts.
- Meat - New York livestock producers marketed 228 million pounds of meat animals during 2004, bringing in \$145 million in cash receipts. Sales from cattle and calves accounted for \$127 million of the total, hogs and pigs returned \$15 million, and sheep and lambs provided \$2.52 million.
- Poultry - The value of New York eggs, ducks, broilers, and turkeys, plus the value of sales for other chickens, totaled \$112 million in 2004. Eggs made up \$59.8 million of the total followed by broilers at \$6.57 million. New York ranks 22nd among all egg producing states.



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