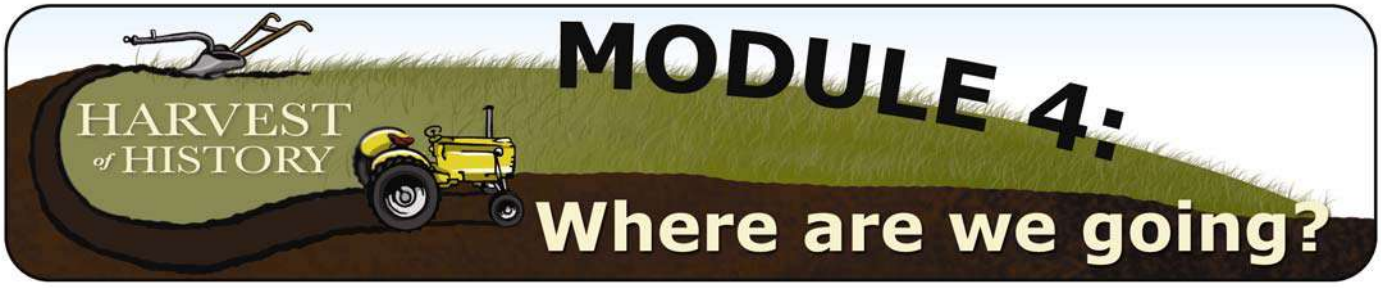

INTRODUCTION

OVERVIEW

In this module, students will investigate the relationship between agriculture and the local economy and begin to understand the complexities of an agriculture-based economy. Basic patterns of economic activity can be seen through the lens of agriculture because it addresses a basic human need: food. Another important consideration is the movement towards the preservation of a viable agricultural market in New York.

ESSENTIAL QUESTION

How have farmers' economic decisions influenced their choice in which crops they are growing and their distribution methods?

NEW YORK STATE STANDARDS

Social Studies Standards

Standard 3: Elementary: Geography #1
Geography can be divided into six essential elements which can be used to analyze important questions and issues. These six elements include: the world in spatial terms places and regions, physical settings (including natural resources), human systems, environment and society, and the use of geography.

Standard 4: Elementary: Economics #1
The study of economics requires an understanding of major concepts and systems, the principles of economic decision making, and the interdependence of economies and economic systems throughout the world.

Math, Science, Technology Standards

Standard 2: Information Systems: Elementary: Information Systems #1
Information technology is used to retrieve, process, and communicate information and as a tool to enhance learning.

Standard 4: Science: Elementary: The Living Environment: #2
Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.

Standard 4: Science: Elementary: The Living Environment: #7
Human decisions and activities have led a profound impact on the physical and living environment

Standard 5: Technology: Elementary: Impacts of Technology #6

Technology can have positive and negative impacts on individuals, society, and the environment and humans have the capability and responsibility to constrain or promote technological development.

Standard 7: Interdisciplinary Problem Solving: Elementary: Connections #1
The knowledge and skills of mathematics, science, and technology are used together to make informed decisions and solve problems, especially those relating to issues of science/technology/society, consumer decision making, design, and inquiry into phenomena.

Career Development Standards

Standard 1: Career Development: Elementary: Career Development: #1
Students will learn about the changing nature of the workplace, the value of work to society, and the connection of work to the achievement of personal goals.

Standard 2: Career Development: Elementary: Integrated Learning: #1
Integrated learning encourages students to use essential academic concepts, facts, and procedures in applications related to life skills and the world of work. This approach allows students to see the usefulness of the concepts that they are being asked to learn and to understand their potential application in the world of work.

Desired Outcomes / Indicators of Success

Students will:

- conduct information-gathering interviews
- become aware of the impact that agriculture has had upon the local economy
- harvest produce from the garden
- learn how to harvest and sell their products
- explore genetic engineering of plants
- develop an appreciation for careers available in the field of agriculture.

Student Inquiries

Students will:

- use historical documents and interview local experts to investigate the relationship between agriculture and the economic history of their region
- determine how local farmers have adapted to stay viable in the agricultural market
- conduct research to determine how a local crop is grown, packaged, marketed and distributed
- harvest produce from the garden and prepare their products
- promote products through the use of various advertising techniques
- discover the pros and cons associated with genetic engineering of plants
- interview agriculture professionals and learn about different careers.

Resources

Books:

Growing Ventures: Starting a School Garden Business. National Gardening Association, 2003.

Costenbader, Carol W. *The Big Book of Preserving the Harvest*. Pownal, VT: Storey Books, 1997.

Hopkinson, Deborah. *A Packet of Seeds*, Greenwillow Books 2004.

Wilkes, Angela. *A Farm Through Time*. New York, NY: DK Publishing Inc., 2001.

Websites:

Kidsgardening.org: Collecting Plants a Pressing Project
http://www.kidsgardening.com/growingideas/projects/june03/pg1.html

Kidsgardening.org: Dyeing to Find Out—Extracting Nature's Colors
http://www.kidsgardening.com/growingideas/projects/may03/pg1.html

NGA Home Gardening
www.garden.org

New York State Department of Agriculture and Markets - This website was designed to help you learn about the many services and specialized programs the Department has to offer as they seek to foster a competitive food and agriculture industry that benefit producers and consumers alike.
www.agmkt.state.ny.us

New York Agriculture in the Classroom - educates youth, teachers, and consumers about agriculture and the food and fiber system.
http://cerp.cornell.edu/aitc

Transforming School Yards: Raising Funds and Building Support
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1866&Type=Art

A Wealth of Wisdom
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1865&Type=Art

The USDA career page just for kids on Sci4Kids
http://www.ars.usda.gov/is/kids/scientists/scientistsframe2.htm

Procedure

ACTIVITY #1: FIELD TO TABLE – FOLLOW THE PATH OF FOOD FROM THE FARM TO YOUR KITCHEN

This activity examines the complex matrix of transportation and economics that delivers our food to us. Each stop along the way from the field to your table indicates interrelated industries employing various specialists in the task of getting your product to you.

- Invite a local truck farmer, farmer's market sponsor or green grocer in to your classroom to discuss how their produce gets from the field to the market. Ask them to discuss the process from harvesting, to packing, to shipping, to distribution as indicated in the Ask an Expert section of the Field to Table worksheet.
- In preparation for the visit, ask your students to identify the origin of their favorite fruit or vegetable. Students should record their discoveries in section one of the Field to Table worksheet.

  Here are some questions they can pursue:
  - Where did your fruit or vegetable originate?
    The Food Timeline - Colorful histories of every imaginable food are detailed in this compelling resource. http://www.foodtimeline.org/
  - Is the food grown in New York? Discover which New York counties are producing the top quantities of fruits and vegetables in Top Counties Maps.
    If so, identify the counties where it is grown. If not, identify where it is grown.
  - When is it harvested? Discover seasonal availability of New York State Fruits and Vegetables on Seasonality Charts.

  Find links to farm fresh producers in your region at the Community, Food, and Agriculture Program website: http://www.cfap.org/afs_temp3.cfm?topicID=444
  - Following the visit, have the students create a timeline tracing their product's journey from the farm to your table. How much time elapses from the time it is harvested to the time it is consumed? How many industries are employed in the process?

ACTIVITY #2: NEW FOODS FOR THE NEW WORLD – GROWING CASH CROPS

Demographically, New Yorkers' familiarity with agriculture has changed over the past century and a half. Historically the majority of New York's population lived in rural areas and made their living as farmers or in service to farmers. The profession of farming has declined so much that it was dropped as an occupational category on the 2000 United States Census.

Recently, New York's farmers have discovered that specializing in organic, ethnic or specialty crops can make the difference between the economic success and failure of their farm.

- Review excerpts from the *Late 1800's Farm Family and the Economy in New York State*, a Yorkers document-based question activity. Have students view the images and answer the accompanying questions.
- Invite a specialty farmer into your classroom to speak with your students about how economic decisions have affected their crop plantings. What crops have they decided to grow? What economic factors influenced this decision? Where do they sell their crops? Create a recipe collection using the crops mentioned by your visiting specialty farmers.
  You can search for specialty farmers in your area at the New Farm – Farm Locator website http://www.newfarm.org/farmlocator/index.php

ACTIVITY #3: PRESERVATION OF AGRICULTURE IN NEW YORK STATE

Agriculture has played a leading role in the economic history of New York. The trade of excess farm crops stems back to the first settlements of Europeans. Once they cleared the land they began growing wheat for export trade. As wheat farmers moved west, their fields turned to pastures for sheep and cattle farmers. These fields eventually became the base for a hay industry which supplied feed for horses in the states burgeoning cities.

At the close of the nineteenth century, dairy products became a leading market commodity in New York. Proximity to markets in the state's growing cities as well as the technological advancement in refrigerated transportation allowed New York farmers to be competitive in the agricultural market.

Milk is still the state's leading agricultural product. New York State is ranked third nationally behind California and Wisconsin as a leading producer of milk. In addition to dairying, the state's farmers have redefined their crop production to fulfill the demands of the agriculture market.

Question: What organizations have emerged to support the future of farming in New York?

- Discover the current issues confronting the New York State agricultural community. Visit the websites of organizations designed to promote agriculture in New York.
  - Center for Agricultural Development and Entrepreneurship (CADE) www.cadefarms.org
  - New York Farm Bureau: http:www.nyfb.org/
  - Pride of New York: http://www.prideofny.com/
  - Regional Farm & Food Project: http://www.farmandfood.org/
  - New York State 4H Homepage: http://www.cce.cornell.edu/4h/
  - American Farmland Trust in New York: http://www.farmland.org/northeast/newyork.htm
  - Future Farmers of America www.ffa.org
  - Slow Foods http://www.slowfoodusa.org/
- Investigate how your local community has responded to the change in demand made upon the agricultural market. Collect brochures, newspaper articles and ads and flyers from your local markets.
  - New York State Farmers' Markets http://www.agmkt.state.ny.us/AP/CommunityFarmersMarkets.asp
  - Community Supported Agriculture (CSA): http://www.csacenter.org/
    - CSA Farms in New York: http://wsare.usu.edu/pub/index.cfm?sub=csa
  - Food co-ops in New York: http://www.coopdirectory.org/directory.htm#New%20York
  - Certified Organic Farms Directory - New York: http://nofany.org/dbapplet/certfarms.html

  Use the web information, brochures and articles to answer the following questions on the Preservation of Agriculture worksheet
  - What are some of the issues facing local farmers? How have NY's farmers adapted their production to stay competitive in the agricultural market?
  - Who sponsors your local farmers' market? Who supplies your local organic or gourmet market? When were the first farm and specialty markets opened in your community?
  - Do these markets have a mission statement?
  - Interview a market supplier, sponsor and customer to discover why they participate in the "specialty" market.

GARDEN ACTIVITIES

Harvest is an exciting time for students. They are proud and often amazed to see the 'fruits' of their labor. Their sense of accomplishment and satisfaction bolsters confidence and self-esteem.

The time to harvest varies by crop. Many lettuce and herb crops can be harvested throughout the growing season (make sure to leave enough foliage so the plant continues to grow). Root crops like carrots, beets and radishes are ready to harvest when the top of the root reaches an optimal size (carefully move soil from the top to check). Crops producing fruits such as tomatoes, cucumbers, squash and beans are usually ready to harvest when the fruit is softening, but still firm to the touch and reaching the right color. Some fruits also provide odiferous indicators of ripeness like cantaloupes, strawberries and peaches. Flowers should be harvested as soon as the buds begin to open.

To discover harvest instructions for your specific crop, search the NGA Home Gardening website at www.garden.org.

Regardless of timing, here are a few tips for harvesting all garden products:

- Use clean cutting implements. Using unsafe or dirty cutting implements can contaminate your harvest and potentially damage your plant.
- After picking the fruits and vegetables, wash your hands with soap and water. Next wash all fruits and vegetables thoroughly with clean water and dry with a clean paper towel. Even if you do not use pesticides in the garden, you want to remove any dirt, bacteria or other microbes picked up from the environment.
- Place clean fruits and vegetables in clean containers (in other words to not place them into the basket used to harvest).
- If you are not going to eat them immediately, you will want to refrigerate most fruits and vegetables to maintain their freshness and slow decay. You do not want to refrigerate tropical and subtropical fruits like tomatoes and bananas however, because the cool temperatures will actually decrease their quality.

Selling Your Harvest: After harvest, you are ready to package your product. Use the research you collected in Module 2 Activity #1 to guide you through the following steps:

1. As a class, decide the best way to package your product. If you are selling salad greens, it may be best to place them in plastic bags. If you are selling cut flowers, plastic cups may work well. Creative labels and logos add to the product's appeal. Packaging needs to be both practical and attractive.
2. Determine a price for your product. Make sure it is appropriate for your intended audience and the value of the product.
3. Decide when and where to sell your product. Determine who will be in charge and how you will handle the money. You may need to seek help from additional adult volunteers.
4. Promote your product through different forms of advertising (school newsletters, signs outside the school, letters to parents, etc.). Activity #1 in this Module provides lesson ideas related to product promotion.
5. Discuss customer service with your students. Give them tips on how to engage your customers.
6. Enjoy the sale!

For additional information on setting up business operations, check out the National Gardening Association's book titled Growing Ventures: Starting a School Garden Business or the following websites:

A Wealth of Wisdom:
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1865&Type=Art

Transforming School Yards: Raising Funds and Building Support
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1866&Type=Art

Basil-Buy-US
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1750&Type=Art

Peddling Plants
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1752&Type=Art

Nutritious Business Reaps Rewards
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1753&Type=Art

Rent-a-Plant
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1005&Type=Art

Getting Hooked on Worms:
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1059&Type=Art

Plant Sale Grows Kids
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1014&Type=Art

Aromatic Entrepreneurs:
http://www.kidsgardening.com/Dig/DigDetail.taf?ID=1107&Type=Art

Post Harvest Garden Care, Outdoor Garden: After harvest, you want to remove all plants from the garden except for annual or perennial plants that will continue to grow and produce. If the removed plants are healthy looking, you can place them in a compost pile. If you suspect insect or disease problems, the plants should go in the trash.

If you are not planning to immediately plant another crop, you may want to do one of the following to make sure your garden area is not overrun by weeds:

- Mulch your garden**.** Cover your garden with a thick layer of mulch to discourage weeds and decrease water loss. The mulch will break down over time and provide organic matter and enrich the soil for next year's crops.
- Solarize your garden. Solarization is the process of using the sun's energy to kill weeds and soil-dwelling pests by covering your garden with a layer of plastic. For a step-by-step guide from the University of Illinois Extension Service about solarization visit: http://www.thisland.uiuc.edu/57ways/57ways_15.html.
- Plant a cover crop. A cover crop, sometimes called green manure, is a short-lived legume (e.g., beans) or grain (e.g., buckwheat) planted to prevent weeds, reduce soil erosion, and boost organic matter. They also help maintain and/or increase the nitrogen content of the soil. For more information visit the Organic Gardening website at: http://www.organicgardening.com/feature/0,7518,s1-2-7-789-2-1-2,00.html.

Indoor Gardens: Remove all plants and place healthy plants and soil in a compost pile and diseased or insect invested plants in the trash. Many teachers ask if they can reuse the soil. Generally you do not want to reuse indoor soil for new indoor plants because the humidity and low levels of air movement in the environment cause mold and fungi to build up. It is best to start each new indoor project with fresh, sterilized soil. Old indoor plant soil can be add to a compost pile or used in outdoor garden beds where the conditions will keep mold and fungi in check.

However, you can save your plant pots for later use. Pots should be cleaned by adult volunteers in a solution of ½ cup of bleach to 1 gallon of water. Let them thoroughly air dry before stacking.

Also carefully clean your growing area and equipment including grow lights. If you do not plan to grow another crop, disassemble your equipment and store it in a safe place to use in future school years.

GARDEN ACTIVITY #1: MARKETING YOUR PRODUCT

Growing and harvesting a crop is only part of the farming process, in order to be a successful farmer, you must also sell your crop. Although most agricultural crops are used to fulfill basic needs, farmers still spend time and money promoting their crops to consumers to increase sales. Bring in examples of agricultural product promotions. Some of the better known national promotions include:
Got Milk? - http://www.whymilk.com/
Florida Orange Juice - http://www.floridajuice.com/
Beef, It's What's for Dinner - http://www.beefitswhatsfordinner.com/
Real California Cheese - http://www.realcaliforniacheese.com/home.cfm?start=1

Also, check out information about the statewide Pride of New York campaign at: http://www.agmkt.state.ny.us/AP/PrideOfNY/pride_index.html designed to promote agricultural products grown and processed in the state of New York. You can use their search engine to find local farmers participating in the campaign (potential classroom speakers). The Web site includes information about the Farm-to- School Program and links to resources to use with the New York Harvest for New York Kids week.

Products are promoted in a number of ways, but one of the most common promotion methods used in our society is advertisements (other promotion ideas include coupons/special offers and word of mouth). Advertisements are prepared written and verbal announcements designed to promote a product or service. They are distributed through many types of media including newspapers, magazines, radio, television, billboards, etc.

Sometimes companies create ads they hope will appeal to a wide audience. Other times they target a specific group and create an ad especially attractive to that group. Discuss how ads are designed for general and targeted audiences and ask your class to brainstorm examples of each.

Ask students to find a newspaper or magazine advertisement that is appealing to them then complete the Advertisement Evaluation Worksheet to analyze it and determine why they like it so much. As a class, create a list of common features or characteristics of good ads (this list may include things like attractive pictures, easy to read text, informative details, etc).

To put this new information into practice, ask students to create an ad for your school farm product. They can choose to design it for a general audience or a targeted audience. You can also let them choose between creating a print ad (magazine or newspaper) or write a verbal ad (designed for a radio or television commercial). If possible, use some of the student created ads to promote your product in school newspapers, newsletters, as flyers, at local radio stations, or on public TV stations.

GARDEN ACTIVITY #2: GENETIC ENGINEERING OF PLANTS

In Module 3, students were introduced to the creation of new plant varieties through plant breeding, a technique refined in the 20th century. During the second half of the 20th century, scientist began to explore another technique for creating new plant varieties- genetic engineering.

All living things are made up of cells. Each cell contains material known as DNA which is like a blueprint for the cell and the organism. The DNA contains a message which when translated tells the cell how to grow, function and reproduce.

The DNA is divided into different segments and each segment directs specific functions and results in specific characteristics. These segments are called genes. In the 1970's, scientists discovered they could

go into a cell and remove genes and replace them with other genes resulting in altered characteristics or functions of a cell and in the organism. Since that time they have worked to identify the jobs of the different genes and used the technology to create improved organisms. The process of altering genes is called genetic engineering.

Scientists have used genetic engineering to create new plant varieties with improved traits or characteristics. These crops are often referred to as genetically modified or GM. Most of the crops researched are food crops because of their economic importance. Some examples include:

- Scientist used genetic engineering to create plant varieties with improved market qualities such as improved taste and longer shelf life. The first GM food crop to hit the grocery stores, the tomato, fits into this category. Scientists working for Calgene, Inc created a new tomato variety named Flavr Savr. Flavr Savr tomatoes ripen slower than normal tomatoes and therefore can travel further and stay on the grocery store shelf longer before rotting.
- Creating plants with increased disease and insect resistance is another major objective of scientists working with genetic engineering projects. For example, new varieties of corn possess built-in pest resistance. Corn ear worm is a common pest of corn crops, but it can be killed by a soil bacteria called B.t. (the full scientific name of the bacteria is *Bacillus thuringiensis*). B.t. produces a toxic protein that kills worms and caterpillars (it is not harmful to humans or other animals). Scientists took genes the from B.t. that tell the bacteria to produce this toxin and inserted them into corn plants. Now a corn plant also produces the toxic protein and kills any corn ear worm that munches on it.
- Another area of research involves creating fruits and vegetables with enhanced nutritional value. For example, a company named Syngenta developed a GM rice variety containing beta carotene. Beta carotene is converted into vitamin A in the body and an important nutrient for vision and healthy skin, bones and teeth. It is called golden rice because the beta carotene adds a yellow-gold color to the grains. Deficiency in vitamin A is a common problem in many Third World country populations where rice is a staple food and so the hope is golden rice will increase vitamin A levels in those areas and improve overall health.

Genetic engineering of plants, especially food crops, is a controversial issue. Scientists supporting GM foods promote the benefits of the new crops including improved market quality, reduced use of pesticides and increased nutritional value. However, there are also individuals concerned about the modifications to our food crops who oppose genetic engineering of plants. Many believe that in spite of extensive testing, since GM crops are fairly new to our food supply, additional problems may appear over time. They argue that GM foods may affect people with allergies who eat modified food without knowing of the alterations. Additionally, they think the altered crops may have negative effects on naturally occurring plant and animal species and wonder if these crops will eventually alter the balance of the ecosystem. Humans make a significant impact on nature through the use of genetic engineering and the critics believe we may find out later these impacts possess negative consequences.

Despite concerns, the number of crops developed using genetic engineering is on the rise.
To explore this topic with your students, ask them to read the article “New Gene Fights Potato Blight” from Science News for Kids available at:
http://www.sciencenewsforkids.org/articles/20030723/Note2.asp.
As a class, make a list of the pros and cons associated with genetically modified plants. Bring in additional articles or conduct a class Internet search to explore additional viewpoints. Ask students to brainstorm a list of ways to resolve this issue (such as conducting additional research studies specifically long term research studies). After class discussions, as them to write a paper on their thoughts about genetically modified food and whether or not they feel it is safe to eat.

For more information about GM foods check out the Guess What’s Coming to Dinner website from PBS: http://www.pbs.org/wgbh/harvest/coming/. This interactive illustration is part of program titled “Harvest of Fear” available at http://www.pbs.org/wgbh/harvest/ discussing the controversies surrounding GM

foods. Although most of the content is designed for older students, the information presented may help you introduce this topic.

GARDEN ACTIVITY #3: CAREERS IN AGRICULTURE

As discussed in Module 3, the number of people farming full time has decreased significantly through the years; however, the agriculture industry includes additional job and career opportunities beyond those on the farm. In a broad sense, the agriculture industry includes all jobs directly and indirectly related to the production of plant and animal crops and is an area increasing in employment opportunities.

Ask local agriculture professionals to speak to your class about their careers and the opportunities available. Make sure they discuss the following:

- job responsibilities
- required skills and or education (link to subject matter)
- impact on society
- opportunities available
- why they chose their career
- steps students should take if they want to this type of career

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To help you think of good speakers for the class, review the Careers in Agriculture Chart. It includes descriptions of some agriculture related career fields including example jobs and links to additional information and professional societies. Use the Future Farmers of America Career Explorer at: http://www.ffa.org/index.cfm?method=c_job.CareerSearch for more ideas. The USDA also has a career page just for kids on Sci4Kids at: http://www.ars.usda.gov/is/kids/scientists/scientistsframe2.htm and one at: http://www.agriculture.purdue.edu/USDA/careers/agriculturaleconomist.html. Additionally the USDA published a report on current and future careers in agriculture at: http://www.csrees.usda.gov/newsroom/news/csrees_news/USDA_05_Report2.pdf.

ASSESSMENT ACTIVITY

Use the information from the activities in this module to write an essay describing how the changes in NY's economy have impacted agricultural methods. How have farmers adapted to changing markets? Use primary documents to support your answer.

EXTENSION ACTIVITIES

- Contact your local farmers' market, Community Supported Agriculture, or Slow Foods organization and volunteer to spend a day working at the market or distribution site.
- Growing a School Garden Business http://www.kidsgardening.com/themes/business1.asp
- Explore heirloom varieties of crops. The Southern Exposure Seed Exchange http://www.southernexposure.com/
- To further explore agriculture careers, in addition to inviting a guest speaker to your classroom, create a bulletin board highlighting different agriculture careers and or ask students to write a brochure on an agricultural career that interests them.

ARTICLE

Excerpt from: **The Family Farm and the Economy in the Late 1800s -** A Learning Experience Using Document-Based Questions

Written by: Beth Dunn, Black River Elementary School, Black River, NY and Kay Staplin, Somers Intermediate School, Mt. Kisco, NY, July 2000 with assistance from: David Lewis and Stacy Ward, Manager State Wide Programs New York State Historical Association and Patrick Peterson, Director Holland Patent Teaching and Learning Center

Historical Context
Throughout the 1800s the Wedderspoon family were farmers in Otsego County, New York. The typical farm family consisted of parents, grandparents, children, and hired workers such as farm laborers and domestic laborers. Everyone had a job in the running of the farm.

Most farmers at this time had large farms consisting of many acres. Some of the New York crops were corn, wheat, maple syrup, apples, potatoes, and hops. The average farmer raised animals such as beef cattle, milking cows, sheep, oxen, and pigs.

A major cash crop on farms during the nineteenth century was hops. Hops are a major ingredient in the production of beer. By 1880, 80% of the United States production of hops was grown in New York. The farmer hired local people to harvest (pick) the crop. The farm family spent the money from hops on goods at the local store such as medicine, candy, and fancy clothes.

TASK
Using information from the documents, answer the questions that follow each document.

- Consider how the late 1800s farm family contributed to the local and national economy.
- Identify and explain the makeup of the farm household (family members and other people who live on the farm).
- Explain how hops provided a cash crop for farmers.

1875 New York State Census (transcribed)
Population Schedule
Otsego County, Otsego, NY

Name of person living in household	Age	Sex	Relation to the owner	Profession, job, or occupation
James Wedderspoon	57	M	Owner	Farmer
Annie Wedderspoon	42	F	Wife	Housekeeper
Joe Madison Wedderspoon	12	M	Son	
Charles F. Wedderspoon	10	M	Son	
Thomas Taffe	31	M	Servant	Farm Laborer
Gina Marie Shaw	34	F	Servant	Domestic Servant
Charlotte C. Scribner	60	F	Mother-in-Law	

James Wedderspoon was an influential farmer in Otsego County, New York, in the late 1800s. His family farm was located near Cooperstown. The Wedderspoon farm grew hops, which was a major cash crop for New York State.

1. Based on the census shown, name the people living in the Wedderspoon household and their relationship to the owner of the farm.

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2. Using the census information describe each person's work role on the farm.

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1875 New York State Census (transcribed and edited)
Agricultural Schedule
Otsego County, Otsego, NY

Name of owner, agent, or managers of Farm	Acres: Improved Land	Cash value of farm.	Cash value of farm buildings	Cash value of gross sales from farms in 1874.	Total of hay in 1874.	Acres in Hops in 1874.	Acres in Hops in 1875.	Pounds of Hops.	Number of Apple Trees	Bushels of fruit in 1874.	Barrels of Cider.
James Wedderspoon	50	$3,500	600	$1,000	40	13	15.5	10,000	80	175	10

1. Based on the agricultural census shown, list each of the crops grown on the Wedderspoon family farm.

2. Based on the agricultural census shown, how much land was used for the following crops:
   Hay

Hops	in 1874	in 1875
Number of Apple Trees		

3. Based on the agricultural census shown, how much of the following crops were harvested on the Wedderspoon family farm?
   Hops

   Fruit

Hops Pickers Photograph

This is a photograph of a group of hops pickers in the 1800s. They are sitting on a box that holds the hops they picked.

1. Based on this photograph, what are some observations you can make about hops pickers in the 1800s?

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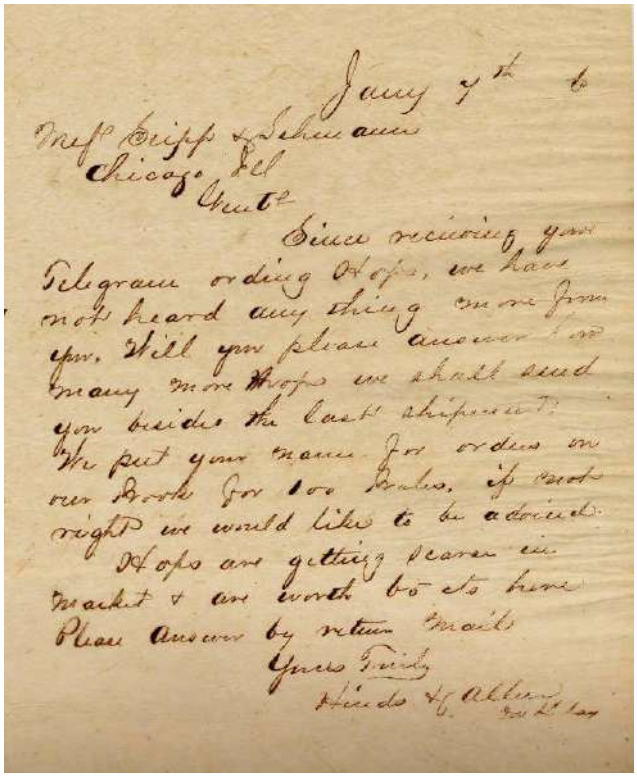
Hops Picker Tickets

After the hops pickers harvested the hops into hop boxes, the farmer paid them with tickets. Each ticket represented how many boxes the worker picked.

1. Based on the tickets, how many boxes did this hops picker harvest?

_____

Letter from Hinds & Allen, Hops Dealers, to Misters Scipp and Schumann



Original letter

Jany 4 6 [January 4, 1866]

Mr[s] Scipp & Schumann
Chicago Ill

...

Since receiving your Telegram ordering Hops, we have not heard any thing more from you. Will you please answer how many more Hops we shall send you besides the last shipment? We put your name for orders on our books for 100 Bales, if not right we would like to be advised.

Hops are getting scarse in market & are worth 65 cts [per pound] here. Please answer by return mail.

Yours Truly

Hinds & Allen

Doubleday

Transcribed letter

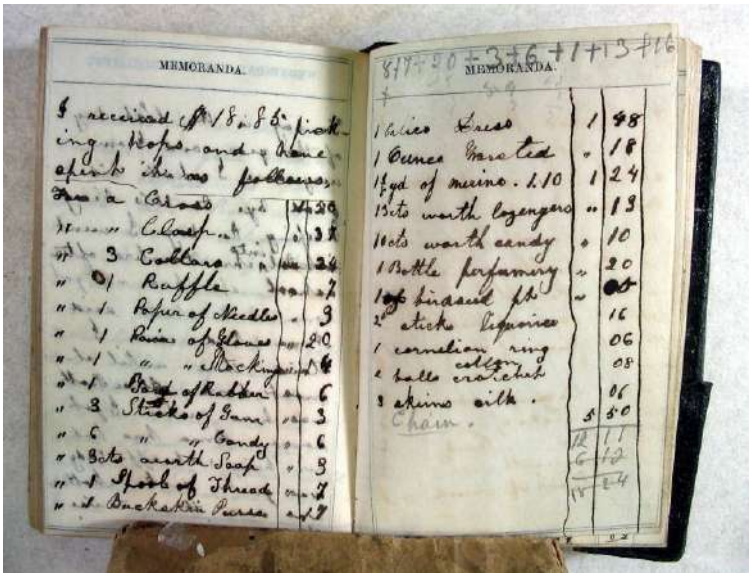
1. Based on the letter, what evidence is there that hops was a significant cash crop for New York State?

_____

_____

_____

Memo from a Hops Picker's Diary



Original diary

Memorandum from the back of Dora's Diary

MEMORANDA

I received $18.85 picking hops and have spent it as follows,

For a	Cross	1.50		1 Calico dress	1.48
"	clasp	.37		1 ounce worsted	.18
"	3 collars	.24		1 1/8 yd of Merino . 1.10	1.24
"	Ruffle	.07		13 cts worth lozengers	.13
"	Paper of Needles	.03		10 cts worth candy	.10
"	1 pair of gloves	.20		1 Bottle perfumery	.20
"	1 " " stockings	.14		1 birdseed pt	.02
"	1 yard of Rubber	.06		2 sticks liquorice	.16
"	3 sticks of Gum	.03		1 cornelian ring	.06
"	6 " " Candy	.06		2 balls cotton crotchet	.08
"	3 cts woth Soap	.03		3 skeins silk	.06
"	1 Spool of Thread	.03		Chain	5.50
"	1 Buckskin Purse	.17			
"	7 pen	.01			
"	3 cts Gumarabic	.03			
"	Spool thread	.04			

Transcription from the diary

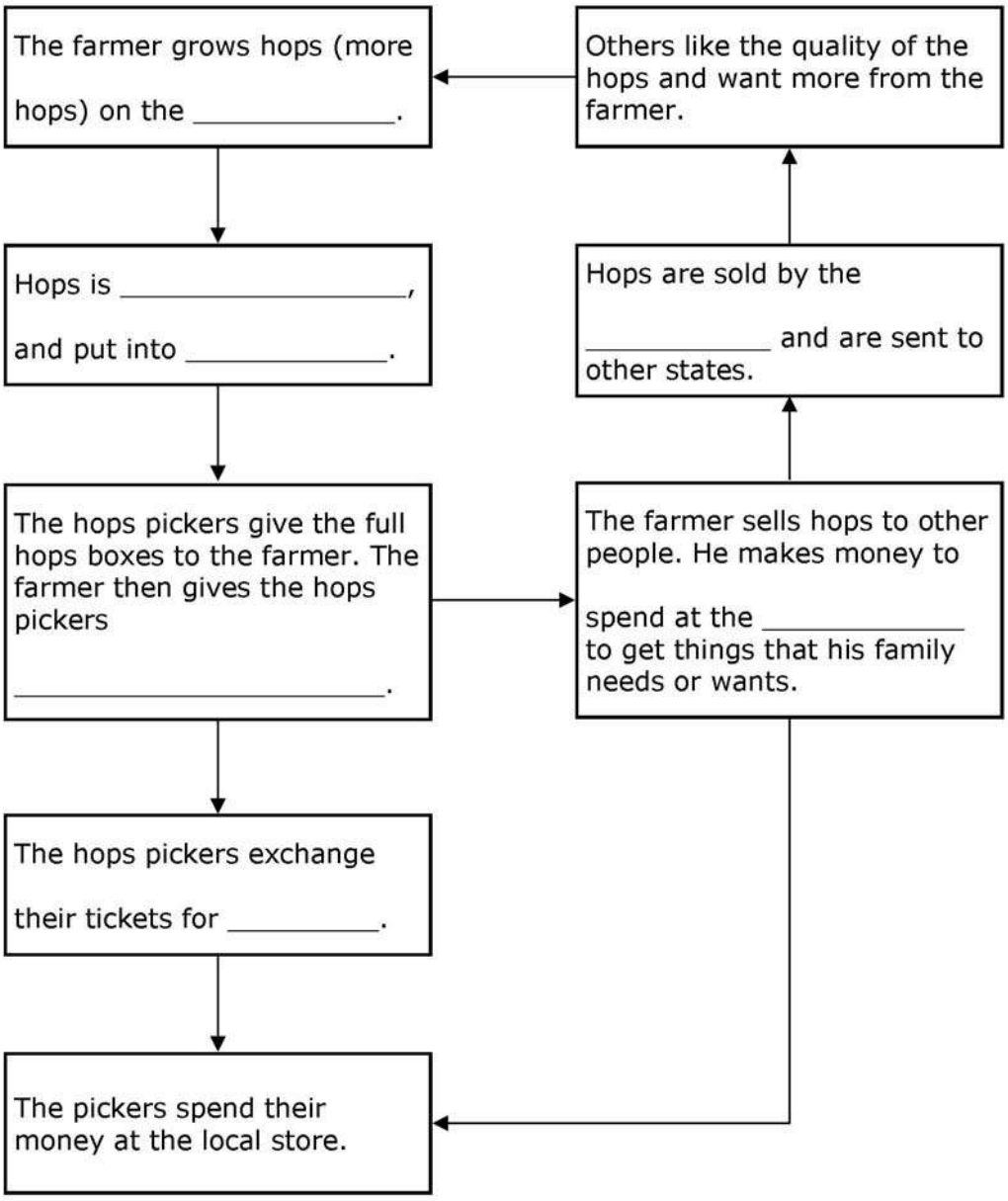
1. According to the memorandum, name several items that Dora bought when her hops picking tickets were converted into cash.

   _____

2. According to the memorandum, how much of her hops-picking money did Dora spend? How much did she keep?

   _____

Directions: Complete the graphic organizer using information from the documents



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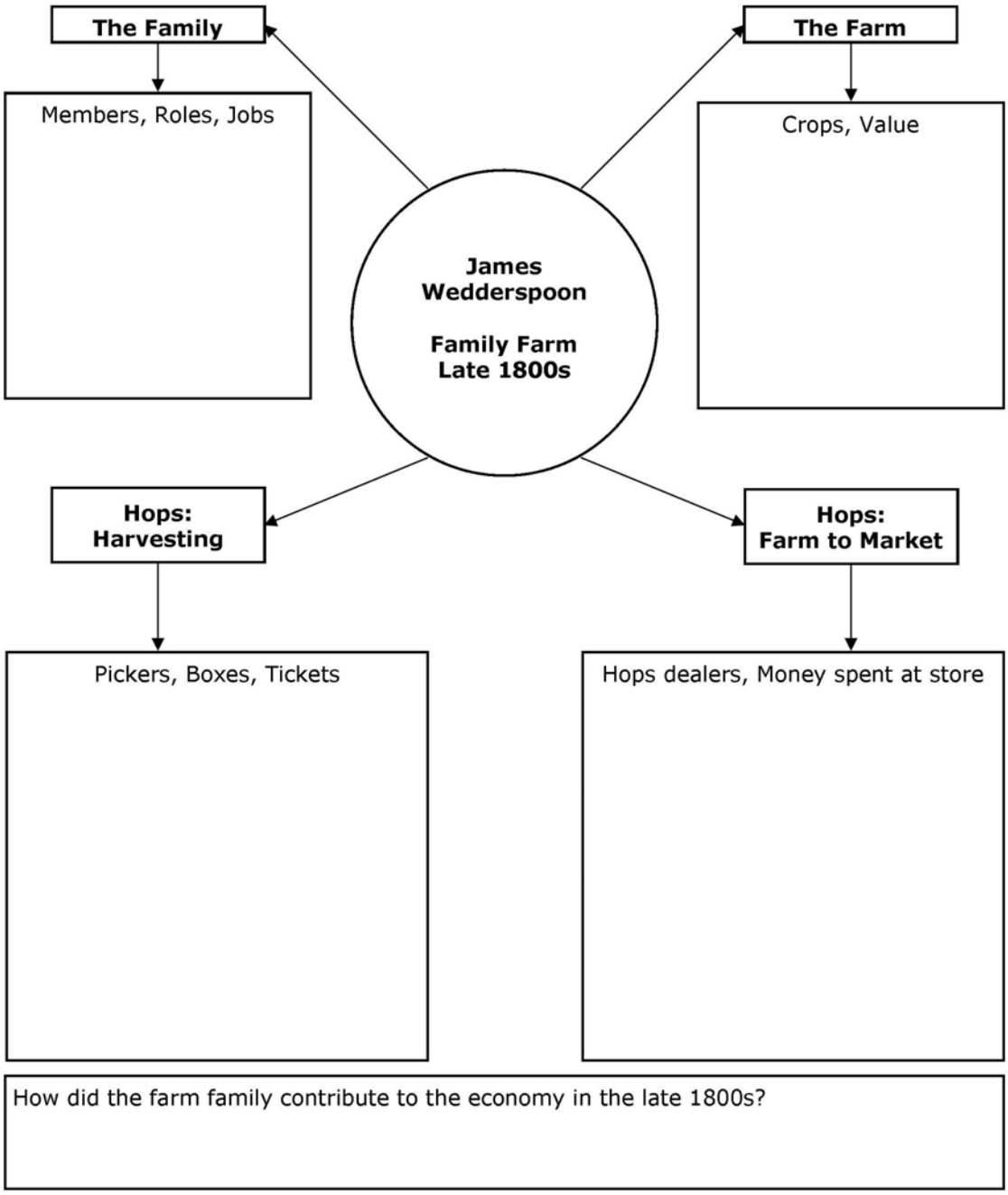


Field to Table Activity - Page 1

My favorite fruit or vegetable is:

Part 1 – Student research

Harvest

1. Where does this product come from?

   _____

2. Does it grow in New York? If so, where?

   _____

3. When is it harvested?

   _____

Part 2 – Ask an expert

Harvest

1. How is it harvested? Is it hand picked or mechanically collected?

   _____

2. Is it ripe when it's harvested? Or does it ripen during transport

   _____

Packing

1. How is the product packaged before shipping?

   _____

2. Does temperature affect your product? Does it need to be refrigerated after it's picked?

   _____

Shipping

1. How is your product shipped? On trucks, boats, or trains?

   _____

2. How far did it travel from field to your store?

   _____

Distribution

1. Did it come directly from a local farm or did it come through a distributor?

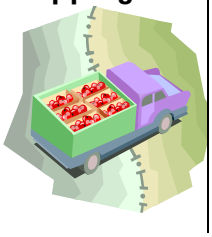
   _____

2. Was it inspected?

   _____

Field to Table Activity - Page 2

Create a timeline tracing your favorite fruit or vegetable's journey from the farm to your market. How much time passes from the when it is harvested to the time it arrives at your store? How many industries are employed in the process?

Industries:					
Time:					
	Harvest 	**Packing** 	**Shipping** 	**Distribution** 	**Market** 

Preservation of Agriculture worksheet

List the titles of the brochures or articles that you have collected.

Brochures:	Articles:

Use the brochures and newspaper articles that you found to answer the following questions.

Brochures
Organizations:

1. Identify the main problem facing local farmers referred to in this brochure.

   _____

2. How have they tried to solve this problem?

   _____

3. Who does this organization help?

   _____

Markets (farmers' markets, organic markets or specialty gourmet markets):

1. Who sponsors your market?

   _____

2. Who supplies your market?

   _____

3. Does the market provide organic products?

   _____

4. When did this market open in your community?

   _____

Newspaper Articles

1. Identify the main problem facing local farmers referred to in this article.

   _____

2. How have they tried to solve this problem?

   _____

Advertisement Evaluation worksheet

Find a newspaper or magazine advertisement that is appealing to you and then answer the following questions:

What is your ad promoting?

Is it a newspaper or magazine ad?

How big is your ad (measure with a ruler in inches)?

Does it use different ink colors?

Does the ad appeal to a lot of people (general) or a specific group of people (targeted)?

Are there any pictures?

Does it have any words?

If it has words, are they easy to read?

Does it provide you with important details about the product?

Does it list the price of the product?

Does it make you want to buy this product?

How does this ad make you feel (happy, sad, excited, nervous, etc.)?

Why do you think you like this ad?

Careers in Agriculture

Career Field	Description	Example Jobs	Additional Resources
Agribusiness and Agricultural Economics	The sale of agriculture products is just as important as their production. Professionals in agribusiness jobs work with the packaging, distribution, promotion, and selling of agricultural products along with the promotion and selling of products needed for crop production. Ag economists focus on analyzing and forecasting the impact of agriculture sales on local, national and global economies.	-farm equipment salesman -researcher for the National Agricultural Statistics Service -grocery store purchasing manager -agricultural insurance sales representative	American Agricultural Economics Association: http://www.aaea.org/career/carercentral/brochure.cfm The Agribusiness Council: http://www.agribusinesscouncil.org/ National Agri-Marketing Associaton: http://www.nama.org/
Agricultural Education	Agricultural Educators work to disseminate information and resources about agriculture to people of all ages. They also work to preserve the history of agriculture and increase awareness of the importance of agriculture to the public.	-university or college professor - Cooperative Extension Agent - high school agriculture teacher -Future Farmers of America or 4-H leaders (may be a volunteer job)	National Council for Agricultural Education: http://www.teamaged.org/agedorganizations.htm
Agricultural Engineering	Agricultural engineers design and construct equipment for the agriculture industry. They also create systems to improve the efficiency of the production and delivery of agricultural products.	-agricultural equipment designer -environmental planner or analyst -irrigation specialist	American Society of Agricultural and Biological Engineers: http://www.asabe.org/membership/beengin.html
Agronomy	Agronomy is the study of row or field crops such as barley, wheat, field corn, rice and hay.	-wheat farmer -research scientist for a seed company -grain sales representative	Crop Science Society of America: http://www.crops.org/pdf/cssa_career_brochure.pdf
Animal Science	The field of animal science focuses on the production of animals (ex. beef cows, pigs, chickens) and animal products (ex. eggs, milk) for our food supply.	-dairy farmer -meat packing plant employee -animal breeder	American Society of Animal Sciences: http://www.asas.org/career.htm

Biochemistry	Scientific research is an important part of the agriculture industry with growing focus on genetic engineering of food crops. Biochemistry focuses on scientific research on the cellular level related to living organisms.	- research scientist for a private industry -university professor and researcher -lab technician	American Society for Biochemistry and Molecular Biology: http://www.asbmb.org/asbmb/site.nsf/Sub/CareerBrochure?Opendocument
Entomology	Entomologists focus on insects and their impact and interaction with our crop production and our world.	-pest control operator - integrated pest management specialists, -scientist developing pesticides	Entomological Society of America: http://www.entsoc.org/resources/education/index.htm
Forestry	Professionals in the field of forestry study trees in urban, suburban and rural settings.	-timber production manager -arborist -urban forester	Society of American Foresters: http://www.safnet.org/education/careerbro.pdf
Horticulture	The field of horticulture includes the production of landscape plants and fruit, nut and vegetable crops	- plant nursery grower - vegetable farmer - garden center manager	American Society of Horticultural Scientists: http://ashs.org/careers/index.html
Nutrition and Food Sciences	Nutritionists study what people should eat and work to relay that information to the general public. Food scientists develop new food and food processes focusing on safety and nutrition.	-hospital nutritionists -food designer -factory safety inspector	American Society for Nutritional Sciences: http://www.asns.org/ The Nutrition Society: http://www.nutritionsociety.org/careers/careers.htm Institute of Food Technologists: http://www.ift.org/cms/?pid=1000411 USDA Food Safety Careers: http://www.cfsan.fda.gov/~dms/careers.html
Plant Pathology	Plant pathologists study the diseases of plants. They also work to identify products and techniques to control these diseases.	-research scientists -pesticide manufacturers -plant diagnostic clinic managers	American Phytopathological Society: http://www.apsnet.org/careers/careers.asp

Recreation, Park and Tourism	Many parks and recreation facilities center around outdoor experiences and because of the link of the environment, jobs in this area are considered agricultural in nature. Additionally there is a growing interest in the creation of visitor experiences surrounding agriculture related industries such as pick your own fruit farms (apples, strawberries, blackberries, pumpkins) and demonstration farms.	-park ranger -pick your own strawberry farm owner -naturalist	National Recreation and Park Association: http://www.nrpa.org/content/default.aspx?documentId=753
Soil Sciences	Soil is the foundation of all agriculture. Soil scientists study soil and how to manage it.	-soil testing laboratory worker -environmental consultant -erosion control specialist	Soil Science Society of America: http://www.soils.org/pdf/sssa_career_brochure.pdf
Turf Science	The turf grass industry studies grasses used for residential and recreational purposes such as for home lawns and golf courses.	-golf course landscape manager -lawn service operator -new turf grass varieties breeder	Turfgrass Producers International: http://www.turfgrasssod.org/index.html
Wildlife and Fisheries	Individuals in the animal science field study domesticated animals, but those in the wildlife and fisheries field study 'wild' (or semi-wild) animals. In addition to hunting and fishing, this industry also focuses on natural resource management and protection of species.	-fish hatcheries manager -wildlife habitat specialist -game warden	American Fisheries Society: http://www.fisheries.org/html/index.shtml International Association of Fish and Wildlife Agencies: http://www.fisheries.org/html/index.shtml
Veterinary Medicine	Veterinarians are animal doctors. Some specialize in small animals like cats and dogs while others care for larger animals like cows and horses.	-veterinarian -veterinary technician -vet medicine sales representative	American Veterinary Medical Association: http://www.avma.org/ Association of American Veterinary Medical Colleges: http://www.aavmc.org/students_admissions/career_center.htm