

Fair Education Program

Grades 3 – 5

The following activities are designed to give you ideas to use with your class before and after your visit to the Fresno Fair. The activities can be integrated into your curriculum, used as mini-lessons, or incorporated into a unit if it works with what you are teaching. It can be used to introduce students to several farm animals as well as to crops that people grow on farms. Students will learn how farmers meet the needs of farm animals. It can be taught alongside a unit on plants, so students will make the connection that animals need food, water, and space to live and grow just as plants do. Students will be able to contrast how plants make their own food with how animals get their food from eating plants or other living things. Students will understand the importance of farms in the as a source of food and other products people use and their importance to the economy of the San Joaquin Valley.

Activities can be used in grades 3rd-5th, so standards listed are the anchor standards for this grade span.

Standards: 3rd-5th Anchor Standards

Reading

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
3. Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
6. Assess how point of view or purpose shapes the content and style of a text.
7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of evidence.
9. Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
10. Read and comprehend complex literary and informational texts independently and proficiently.

Writing

1. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
2. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
3. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
4. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
5. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
6. Draw evidence from literary and/or informational texts to support analysis, reflection, and research.

Comprehension and Collaboration

1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

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Presentation of Knowledge and Ideas

1. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
2. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
3. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

Language

Conventions of Standard English

1. Demonstrates command of the conventions of Standard English grammar and usage when writing or speaking.
2. Demonstrates command of the conventions of Standard English capitalization, punctuation, and spelling when writing.

Knowledge of Language

1. Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

Vocabulary Acquisition and Use

1. Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.
 2. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
 3. Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college- and career-readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.
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Overview of the Knowledge:

1. Define erosion as the breakdown and runoff of soil. Identify ways that erosion can occur, and how that affects farming in the central valley.
2. Understand the water cycle, drought conditions, and their relationship to life on earth.
3. Understand the needs of plants and animals to grow and thrive in a farm or ranch environment.
4. Understand the major components of soil, its origin, and its importance to plants and animals including humans.
5. Understand the many components of the dairy industry critical to the California economy

Culminating Project or Summative Assessment:

1. To introduce the lesson, read aloud a winning Imagine this... story that highlights the life of a fruit or vegetable. Explain to students that the goal of this activity is for each student to write a fictional, creative story about life as a fruit or vegetable. Each story should outline the life of one fruit or vegetable from the farm to the table. Stories could be turned into the Imagine, a story writing contest. See attached information in resource section. Students have the opportunity to have their published story shared with students and educators throughout California. Six state-winning authors, one from each grade (3-8), will have their stories illustrated and published in a book. Awards will be presented to state and regional winning author.
2. Write a persuasive letter to parents convincing them to attend the Big Fresno Fair.
3. Write and present a research report on an animal or crop at the Big Fresno Fair.

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Essential Questions

How can we compare and contrast the most important information presented at the Fresno Fair with information gathered from texts and multi-media sources on the same topics?

How can we use illustrations and details in a text to describe its key ideas represented by displays at the fair?

How can we integrate what is learned at the Big Fresno Fair with information

How can we write a narrative that recounts in detail, two or more sequenced events in our class trip to the Fresno Fair?

How can we write a narrative that shows the path from field to table in the life of a fruit or vegetable?

Lesson Sub-Questions	Skills	Activities	Resources and Tools	Teacher Notes
Can information be gathered from sources other than text?	Gather relevant information from multiple print, media, and life experience sources on a topic	1. Brainstorm with students their experiences at the fair and at carnivals.	If students have not visited a fair or a carnival, provide text or media sources to enrich their knowledge.	
What is a fair? How is it different from a carnival?	Work together in collaborative groups and share out ideas with others	2. In collaborative groups discuss the questions: What is a fair? How is it different from a carnival? Is the purpose behind a fair different from a carnival, or the same? What can you infer from the activities at each event? Can the two be combined?	Teacher Resources : "The Big Fresno Fair History"	
How can close reading help determine central ideas or themes of a text?	Writing an opinion paragraph, stating a claim and supporting it with evidence from text or class discussion	On chart paper they note their findings to share out with the class.	Fair Vocabulary page	
How can summarizing key ideas and supporting details increase comprehension and share new learning?	Reading closely to analyze text and determine main idea and details	3. As a whole class, or in small groups, have students create a Venn diagram highlighting similarities and differences in a fair and a carnival.	The Fresno Bee newspaper or other local newspapers	
How does point of view or purpose shape the content and style of a text?	Write informative text to clearly convey main idea and supporting details of a text	4. Write an opinion paragraph, "Where can I learn more important information, at a fair or a carnival?" State a claim and support it with 2 or 3 key details from the text or information on Venn diagram.	Teacher Resources Activity #2. Map Grid	
What kinds of information can be found in maps and diagrams?	Write a summary of an expository text	5. Create a KWL (Know-Wonder-Learn) three- column chart or a web about the fair on chart paper, a chalkboard, or a whiteboard to record students' responses. Save the chart or web for future reference before and after fair visit.	Free resources, maps, information sheets available at the fair	
How can students integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally?	Determining author point of view and purpose	Input student ideas without judgment, as they will be reassessed as the unit progresses.	What's Really Happening on the Farm Poster	
What are the key elements needed in a newspaper article?	Creating and reading maps. Comparing maps to actual locations		Teacher Resources: Fresno County Products Animal Facts	
	Noting characteristics and value of resources for a task		California produces more than 400 different agricultural commodities, providing an abundance of fruits, vegetables, nuts, milk, nursery plants, flowers, fiber and livestock. According to the California Department of Food and Agriculture, our state produces	

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Is there additional information that can be learned from an interview that cannot be learned from a text? How can an illustration and caption convey information? Can understanding one topic help clarify another topic? How can organizing information, findings, and supporting evidence, help listeners follow the line of reasoning? How can information from multiple sources build knowledge? How can text be analyzed by asking and answering questions? How can creating a diagram clarify information? How can looking at information in a totally different way, clarify meaning? How can information gathered from the fair, multiple print, and digital sources be relevant in solving real world issues? How can information from multiple sources build knowledge? How can digital resources build knowledge How can key information be	Synthesize information from a variety of sources Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization Using a graphic organizer to organize research for writing Illustrating writing to enhance information presented Publishing writing in final form Sharing ideas in collaborative groups Comparing and contrasting two topics to determine similarities and differences Working on research project in collaboration with peers Research information collection and organization Integrate and evaluate content presented in diverse media and formats Taking notes on content of an informational video Using a graphic organizer to note key ideas Asking and answering questions to more deeply determine what	Use as a place to synthesize information for text, media and fair visit. Teacher read aloud the history of the Fresno Fair once through to get the gist of the text. Second read, circle new vocabulary. On fair journal pages write new vocabulary. Determine which words can be defined from information in the text and which words require an outside source. Revisit text individually, small group or orally with whole group and model annotating the text looking for main idea and key details on the history of the fair. Use a T-chart or annotation symbols on the text to guide students to cite text to support their ideas. 6. Have students write a paragraph summarizing the main idea and supporting details in the history of the Fresno Fair. Students bring articles from the Fresno Bee or other local newspapers that tell about the upcoming Big Fresno Fair. Create a bulletin board from the articles. Compare the articles to determine author's purpose and effectiveness. After visiting the fair, discuss author's purpose in the newspaper articles, have students create a newspaper article or ad for the fair. Students review map of the fairgrounds, and complete activity locating places on the map. At the fair students will compare map to the actual location of exhibits and buildings. Students will fill in additional details in their maps. What can be found in each building? Have any buildings changed location? If so, mark new location	nearly half of US-grown fruits, nuts and vegetables. Several crops enjoyed across the country are produced exclusively in California. Each sheet in this set introduces an agricultural commodity, plant nutrient or agricultural topic. Additionally, the sheets provide ideas for using this information in a lesson or activity. Additional commodity fact sheets are currently being prepared. If you have a particular need or interest, or would like to sponsor a fact sheet, please contact us. http://learnaboutag.org/resources/fact.cfm https://agclassroom.org/kids/tours.htm Science Projects, Farm and Food Fun, State Ag Facts, Ag Knowledge, Virtual Tours Teacher Resource page: Wild and Woolly Facts: Did You Know? Jenna, A Dairy Farmer Video https://www.youtube.com/watch?v=EOAavg4ftFk National Agriculture in the Classroom Complete lesson http://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=16
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determined from text, maps, and real life experiences? How can evidence from text and demonstrations be used to support opinions?	a text says. Reading closely to determine what the text says explicitly and to make logical inferences from it; Analyze text and video information, determine key points, and present it in diagram format. Summarize the key supporting details and ideas. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words. Summarize the key supporting details and ideas. Participate effectively in a range of conversations and collaborations with diverse partners Determine what the text/maps says explicitly and make logical inferences from it. Summarize the key supporting details and ideas. Write informative/explanatory texts to convey complex ideas and information clearly and accurately Participate effectively in a range of conversations and collaborations with	on the map. Are any new areas not located on the map? Students review resources that can be picked up at the fair to make it easier to clarify areas on the map? Collect any free resources that will be helpful to research the layout of the fair. Create fair journals where students will write data from research before their trip to the fair, and they can add information gathered at the fair. Students plan to be “reporters” after their visit to the fair. Students can have assignments to report on different buildings visited. Have students take notes and possibly conduct a short interview at the fair in their building. 1. Discuss what are they key elements in an informational news article. In collaborative small groups have students create a graphic organizer telling the 5 W’s, Who, What, Where, When, Why for their articles. 2. Discuss what information could be gained from an interview as opposed to an exhibit. Create a list of key questions that could be asked in an interview. Use the list to create a form for students to fill in during an interview. Before, or soon after the visit discuss as a class what makes an article interesting, accurate, and persuasive. Using their graphic organizers and interview questions, have students write an article telling about the Big Fresno Fair, illustrating the article with a photo or drawing and including a caption with the illustration. Students’ articles can be put together to create a class newspaper. As a class decide on a name, date, and editor for the newspaper. If	Read paragraph from Teacher resources on soil. Dirt: The Scoop on Soil (Amazing Science) by Natalie M. Rosinsk Jump into Science: Dirt by Steve Tomecek (Author), Nancy Woodman (Illustrator) Teacher Resources Science in Your Watershed, http://water.usgs.gov/wsc/ http://drought.unl.edu/DroughtforKids.aspx This lesson is part of a series called Fruits and Vegetables for Health, which introduces students to the production, distribution and nutritional value of fresh produce. Students will gain knowledge in geography, language arts, science, and math as they learn about the process through which fruits and vegetables are transported from California farms to kitchen tables. California crops from farm to table Complete lessons 3-5 http://learnaboutag.org/matrix/lessonplan_print.cfm?lpid=334 http://agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=334&search_term_lp=california
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	diverse partners Present information, findings, and supporting evidence such that listeners can follow the line of reasoning. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences	computers are available they can be used to create a finished product. They could also be added to the bulletin board with newspaper articles. Explore what do animals need to grow and thrive? Have students in collaborative groups discuss what animals need to grow and thrive. Have them write their ideas on sticky notes and attach to class chart. Whole class review ideas and chart finding-air, food, shelter, space (habitat) Discuss how farmers provide these needs to their animals. Give each group a brown paper bag that represent what an animal needs to grow and thrive. 1. Have each group put in a small balloon slightly blown up with air, 2. a pinch or blue glitter to represent water, 3. a pinch of cornmeal or grits to represent grain that most farm animals eat, also add some shredded paper that represents cut grass or hay, 4. a small square of red or gray construction paper to represent the barn or shelter for the animal, 5. finally, place a googly eye to represent the farmer who keeps a close eye on the animals' health and wellbeing. Have students create a Venn diagram to compare and contrast their needs with animal needs. Students individually or in collaborative groups may gather information on similar or different topics to be presented to the class in presentations. Students may select one animal or crop that is represented at the fair to research and report on. As a whole class model researching one animal to collect information for student reports. 1. Determine what information is important to be included in report. 2. Determine what is the best type of graphic organizer to record information found.	What Grows in the California Sun website and teacher resources Agricultural Fact Sheets http://www.learnaboutag.org/resources/fact.cfm Teacher Resources http://www.choosemyplate.gov MyPlate illustrates the five food groups that are the building blocks for a healthy diet using a familiar image-a place setting for a meal. Before you eat, think about what goes on your plate, in your cup, or in your bowl. Download from website pages on each part of the plate. Click on each section on home page. California Produces Map www.LearnAboutAg.org/caproduce Commodity fact and activity sheets www.LearnAboutAg.org/factsheets Grape-icious http://www.tablegrape.com/lessonplans.php We Garden http://www.learnaboutag.org/resources/index.cfm Imagine this... story http://www.learnaboutag.org/programs/contests.cfm Video of student and teacher from the	
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		3. Determine each student's animal, and have students record their topic on top of the graphic organizer. 4. Using the fact sheet on sheep fill in graphic organizer with facts necessary for report. 5. Determine what other sources can be used to find additional information. Library books, websites, videos, interviewing farmer/rancher Different industries are represented at the fair. One example could be the cows and dairy production. Present As students watch the video have them complete a bubble map of key ideas presented. At the completion of the video ask the following questions: • "What tools or technology did you notice in the video necessary for the production of milk?" (<i>Milking machines, milking parlor, refrigerated holding tanks, pedometer</i>) • "What is different about how farmers produced milk and cheese in the past?" (<i>Cows are no longer milked by hand</i>) • "Does milk come from the store?" (<i>No, it originates directly from the dairy cows that live on a farm</i>) • "How has technology made it easier for us to buy so many different kinds of food products from the store?" (<i>refrigeration, and refrigerated transportation</i>) • What do cows need to grow and thrive? • Is this similar or different from what other animals on the farm need to grow and thrive? • Can you infer anything about the production of other farm products from the production of milk? Have students create a diagram showing the path milk takes from	contest. https://www.youtube.com/watch?list=PL7PWWDmA0aQPv6jmrsrcxFmK0xys3XOdca&v=fq-sTtE8EO8 Stories from past winners http://www.learnaboutag.org/programs/contest_state2015.cfm	
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		farm to table. Have students label diagram and put captions with illustrations. What do plants need to grow and thrive? How is what plants need similar of different from what animals need? Read aloud books from resources or passage in Teacher Resources. Soil 1. Scaffolding as needed read aloud or have students read paragraph on soil. Annotate passage to determine main idea and key details to answer: Why is soil a valuable resource for the farm? How is topsoil formed and why is it critical to plants and animals? Objective: Construct a model of the soil profile. Materials Needed: Three different types of cereal; clear plastic cups; milk; spoons; dried fruit (ex: raisins, cranberries) Steps: 1. Explain to students that there are 3 basic layers of soil; this is called the soil profile. Bedrock is the deepest, next is subsoil, and lastly is the top layer of topsoil. Topsoil contains the most nutrients and is where plants grow. 2. Give each student a clear plastic cup. Instruct them to use the different types of cereal (you may leave it whole or crush it up) to create their soil profile. On a piece of paper, have them draw a diagram of their profile and label it. 3. Add the dried fruit on top to represent the humus, or organic matter, in the topsoil. 4. Pour a little bit of milk into the cup to simulate rain. 5. Eat and enjoy! Plants need water. Students read passage on water. Annotate with symbols or		
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		highlighter main idea and details. Watch drought video. Write notes while watching video. Discuss as a class and chart ways the drought can have an impact on plants and animals on California farms. Write a paragraph summarizing the importance of water. Lesson: Crops: From the Farm to Table What crops are grown in the San Joaquin Valley? On a large class map or desk, locate the San Joaquin Valley, Fresno County, and all the communities which have displays at the fair. During or after the fair visit mark crops which were on display. Discuss how climate, water and soil affect an area's agricultural growing capacity. Find grocery advertisements of 15 different California grown commodities seen at the fair. Tape advertisements on the map. Do prices vary for different commodities? Have students discuss what crops they would plant and why? Whole group or in collaborative groups have students discuss the five food groups that are the building blocks for a healthy diet using a familiar image-a place setting for a meal. On a large ChooseMyPlate graphic have students draw and place the different fruits, vegetables, grains, and meats (animals) seen at the fair. Grapes are one of the crops seen on display in many different communities. California grows 100 percent of the raisins in the U.S. and more than one third of the raisins in the world. The majority of		
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		raisins are grown in the San Joaquin Valley due to its fertile soil and long, hot summers. California raisins are shipped all over the world. The top ten export markets for California raisins are: • Japan • United Kingdom • Germany • China • Sweden • South Korea • Taiwan • Malaysia • Norway Print out a map of the world from Eduplace www.eduplace.com/ss/maps. Instruct students to find and label each of the listed countries on the map. Ask students what they can infer about the market for grapes and how it might differ from other commodities. Have 3 different colored grapes available. Make the class graph on a large piece of piece of paper naming the grape variety for each column. Have students vote for the variety they prefer, using post-it notes for their name and the reason for their preference. After all students have voted, discuss the results and students reasons for their preference. Have students summarize findings in a paragraph. Have students work collaboratively to select one fruit or vegetable that they saw at the fair to research. Ask students to brainstorm words (adjectives) which describe the fruit or vegetable and record responses on a chart. Have enough of each item available so that students can feel, smell and tastes it. Using the words on the charts and their experiences with the item, have each student write a complete description of it, including how it looks, feels, smells, and tastes. Students should describe the look		
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		and texture of both the inside and the outside of the fruit or vegetable. Students should then draw their items and label the parts. Without naming their fruit or vegetable, groups may present their findings to the class, and other groups may try to determine what is being described. Culminating Activity My Life as a Fruit or Vegetable 1. Explain to students that the goal of this activity is to write a fictional, creative story about life as a fruit or vegetable from the farm to the table. 2. Brainstorm with the class a list of questions that students will need to answer as they write their story about the production and development of a specific produce item. Questions might include: How am I planted? Where am I grown and why? How am I harvested? How am I transported? What good things (nutrients) can I offer? How am I prepared/cooked? 3. Ask each student to select a different fruit or vegetable that will be the main character or theme of their story. 4. Instruct students to use the county statistical data from CDFA, the list of questions brainstormed by the class and other resources to create a rough draft. The story should be written in first person narrative, with the fruit or vegetable telling the story. 5. Instruct students to edit each other's work. Students can be assessed on the editing as well as the writing part of the lesson. 6. Have students write final drafts of their stories as their culminating writing activity. The final versions can also include illustrations.		
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Determine Unit Key Vocabulary

Academic:

Map: a picture that represents all or part of the Earth's surface

Geography: the mountains, valleys, lakes, rivers, and other physical elements that make up an area

Commodity: fruits, vegetables, nuts, or grains, as a unit that are bought or sold

Production

Transport

Export markets

Technology

Thrive

Domain specific:

Agriculture: the science and business of growing crops and raising livestock

Crop: an agricultural plant grown and harvested

Farmer: a person who produces food, fiber, or plants, for others to use

Farm: a piece of land where crops or animals are raised

Harvest

Drought

Nutritious

Soil

Useful Websites:

The Old Farmer's Almanac for Kids, <http://www.almanac4kids.com/weather/index.php>

Science in Your Watershed, <http://water.usgs.gov/wsc/>

Soil Science Society of America, <https://www.soils.org/lessons>

Animal Science Image Gallery, <http://anscigallery.nal.usda.gov/index.php>

Science Projects, Farm and Food Fun, State Ag Facts, Ag Knowledge, Virtual Tours , <https://agclassroom.org/kids/tours.htm>

Note booking pages for journaling : sample cow page

http://www.activityvillage.co.uk/sites/default/files/images/cow_notebooking_page_460_0.jpg

Sci4Kids, <http://www.ars.usda.gov/is/kids/>

Know Your Roots <http://www.ars.usda.gov/is/kids/WhatinWorld/Roots/3DRootsHome.html>

National Agriculture in the Classroom, <http://www.agclassroom.org/teacher/matrix/resources.cfm?rid=234>

Grapes from California, <http://www.tablegrape.com/lessonplans.php>

These California-specific fact sheets include information about natural resources or commodity production, history, nutrition, top producing counties, and economic values. The activity sheets provide specific lesson ideas and fun facts for each topic.

www.LearnAboutAg.org

These brief videos provide an inside look at dairy farming and milk handling.

<http://www.healthyeating.org/Schools/Mobile-Dairy-Classroom/Handouts-Resources.aspx>

Local Hilmar Dairy cheese making process

http://www.hilmarcheese.com/Visitor_Center/Tour/Virtual_Video_Tour/

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How to choose healthy food, <http://www.choosemyplate.gov/MyPlate>

It's a Moo-stery, <http://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=16>

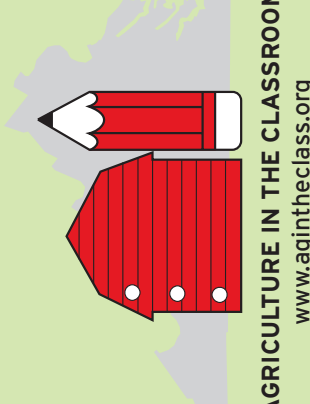
- Extra Cheese, Please! (Book)
- Milk Comes From a Cow? (Book)
- The Cow in Patrick O'Shanahan's Kitchen (Book)
- Brittlelactica: Planet in Need (Multimedia)
- Consider the Source- Cheese (Multimedia)
- Hilmar Cheese Company Virtual Video Tour (Multimedia)
- The Journey of Milk (Multimedia)
- Dairy Reader (Booklets & Readers)
- Discover Dairy (Website)

Useful Literature:

- Jump into Science: Dirt by Steve Tomecek (Author), Nancy Woodman (Illustrator)
- Dirt: The Scoop on Soil (Amazing Science) by Natalie M. Rosinsk
- Seed, Soil, Sun by Cris Peterson
Seed. Soil. Sun. With these simple ingredients, nature creates our food. Noted author Cris Peterson brings both wonder and clarity to the subject of agriculture, celebrating the cycle of growth, harvest, and renewal in this American Farm Bureau Foundation's Agriculture Book of the Year.
- Amazing Grazing by Cris Peterson
- All Around the Farm by Heather Alexander
- Big Red Barn by Margaret Wise Brown
- Diary of a Worm by Doreen Cronin
- Did a Dinosaur Drink this Water? by Robert Wells
- Down Comes the Rain by Franklyn Branley
- Farm Animals by Nancy Dickmann
- A Handful of Dirt by Raymond Bial
- Soil by Christin Ditchfield
- Water Dance by Thomas Locker



What's really happening on the Farm



AGRICULTURE IN THE CLASSROOM
www.agintheclassroom.org

Overview -

Agriculture is both Virginia and the nation's largest industry with an economic impact of \$55 billion annually in the Commonwealth. Virginia's temperate climate results in diverse crop production including corn, wheat, soybeans, tobacco, tomatoes, cotton, apples, potatoes, peanuts, and grapes, among others. Virginia farmers also raise a variety of livestock including broilers (chickens), beef cattle, dairy cows, and turkeys. The purpose of this resource is to illustrate the many steps taken by the farmer to produce a quality product while acting as a steward of the land.

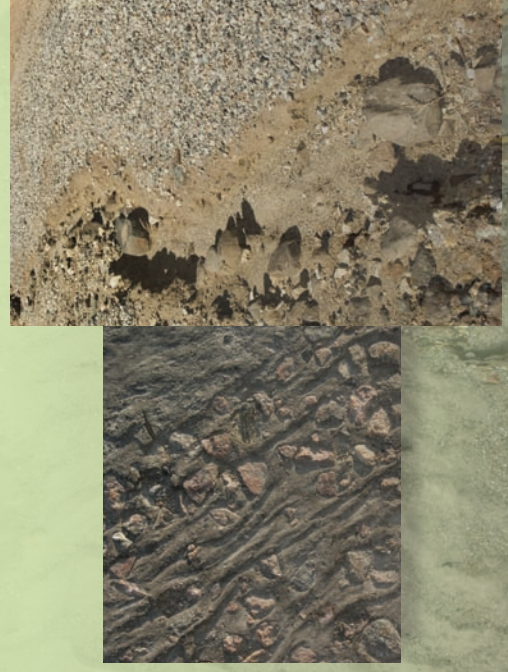


Become an Erosion Expert

- Objective:** Demonstrate how ground cover can slow and prevent soil erosion.
- Materials Needed:** Wide mouth jars; funnels; topsoil; grass clumps (including roots and soil); water; watering can; leaves; pine needles; rocks
- Steps:**
1. Define erosion as the breakdown and runoff of soil. Identify ways that erosion can occur. Ask students to brainstorm why erosion can be harmful.
 2. Place a funnel at the top of a wide mouth jar. Fill the funnel with topsoil. Now use a watering can to "rain" down on the funnel. Have students observe what happens.
 3. Note all of the runoff that is now in the bottom of the jar. Tell students that their task, in groups, is to come up with ways to slow down and prevent the runoff. Have available for them to use: soil, grass clumps, leaves, pine needles, and rocks.
 4. Have groups take turns demonstrating their findings and conclusions to the class. As a class, evaluate and discuss the success of various approaches. Point out that a common theme is that plant matter slows down the runoff and erosion of the soil. Draw analogies between this and how farmers plant buffer and/or cover crops and utilize no-till.

Exploring Further:

Explore your schoolyard for examples of erosion. Look for places where water has cut grooves into the soil or where small piles of sand have been deposited. Identify how the erosion was caused.



Background Knowledge -

Best Management Practices (BMPs)

Farmers rely on healthy land to produce healthy and bountiful crops. There are several ways that these can help protect the soil; these are called Best Management Practices (BMPs). A few common BMPs are: conservation tillage, crop rotation, vegetative buffers, and cover crops. First, conservation tillage, which refers to leaving crop residue on the ground. By leaving plant residue on the ground, farmers help prevent runoff and soil erosion. Second, crop rotation, which aids in nutrient management. By rotating complementary crops, such as corn, soybeans, and wheat, farmers can improve the quality of the soil while also reducing the amount of fertilizer needed. Third, vegetative or conservation buffers, which are trees or grasses that are planted in between fields and waterways. These act as a barrier, helping keep pollutants out of the water. Lastly, cover crops, which are planted by farmers in between harvests to prevent runoff and erosion. Cover crops, such as rye grass or clover, protect the soil from wind and water erosion. Additionally, cover crops help keep nutrients in the soil and out of the waterways.



Animal Care

Farmers who raise animals, such as cows, chickens, turkeys, sheep, or hogs are called livestock producers. It is the farmer's job to make sure that their animals are well taken care of. Animals rely on farmers for shelter and care to keep them healthy. In turn, people rely on farm animals for food and clothing. All animals share the same basic needs of food and water. Some farm animals may graze on pastureland and might be provided with extra hay or silage. Silage is made when a plant such as corn or grass is cut, finely chopped, and packed tightly to store. The farmer will carefully choose the correct type and combination of grains for their animals in order to give them the best possible nutrition. Additionally, farmers provide their animals with shelter to protect them from severe weather and to keep them safe. Lastly, in order to keep their animals healthy, farmers will seek the help of veterinarians. Veterinarians are doctors who take care of animals and make sure they stay healthy. Some veterinarians take care of pets like dogs or cats, while others, called large animal veterinarians, specialize in the care of farm animals.



Water Quality

Water is used by many people in many ways. But people are not the only ones who need water; it is also a critical resource for crops and animals. The earth, however, has a limited amount of water. The water cycle keeps going around and around in a cycle. This is called the water cycle, which is made up of five steps: sunlight, condensation, precipitation, evaporation, and accumulation. Because water is so important for farmers there are several things that they can do to conserve it and keep it clean. For example, they might utilize watering systems that put water directly at the plants' roots – this allows more water to get straight to the plant instead of evaporating. A primary goal of agricultural best management practices is to protect waterways and help keep them healthy.

Make it Rain

- Objective:** Observe the steps of the water cycle in action.
- Materials Needed:** Aquarium or large glass bowl; small beaker; plastic wrap; tape or rubber bands; stone; small rocks and/or soil; water
- Steps:**
1. Review with students the steps in the water cycle and the associated vocabulary – evaporation, condensation, precipitation, accumulation.
 2. Tell students that you will be creating your own water cycle in the classroom.
 3. Take an aquarium and cover the bottom with small rocks and/or soil. Pour water over the top of the rocks/soil.
 4. Next, place a glass beaker in the middle of the aquarium.
 5. Cover the aquarium with clear plastic wrap. Secure with packing tape or a large rubber band.
 6. Place a stone in the middle of the plastic wrap, directly above the beaker. This will create an indentation in the top, resulting in a point above the beaker, allowing all liquid to accumulate in the beaker.
 7. Place the aquarium near a window or by a heat lamp. Have students observe and record their observations daily. Be sure to take regular measurements of the water in the beaker.

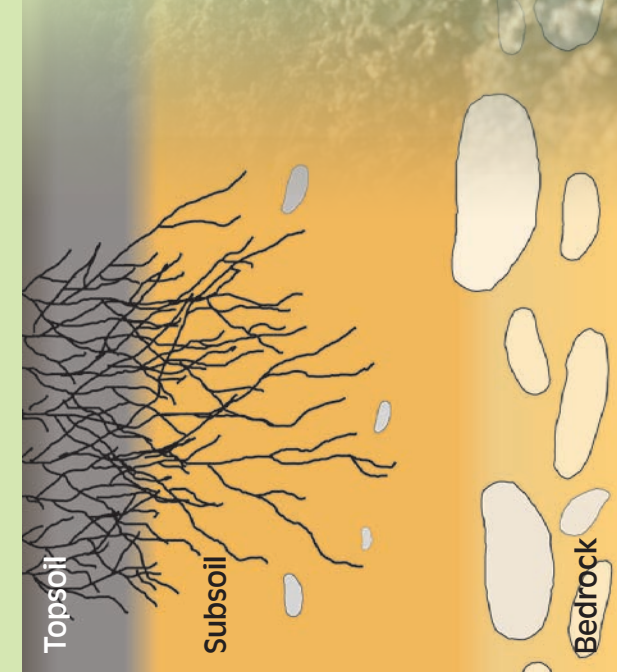
Exploring Further:

94% of the earth's water is salt water in the oceans. Demonstrate the difference in a plant's reaction to salt water versus fresh water. Take one glass and fill it with fresh water. Take another and fill it with fresh water plus one tablespoon of salt. Place a slice of potato in each and observe over the course of a couple days.



Soil cereal

- Objective:** Construct a model of the soil profile.
- Materials Needed:** Three different types of cereal; clear plastic cups; milk; spoons; dried fruit (ex: raisins, cranberries)
- Steps:**
1. Explain to students that there are 3 basic layers of soil; this is called the soil profile. Bedrock is the deepest, next is subsoil, and lastly is the top layer or topsoil. Topsoil contains the most nutrients and is where plants grow.
 2. Give each student a clear plastic cup. Instruct them to use the different types of cereal (you may leave it whole or crush it up) to create their soil profile. On a piece of paper, have them draw a diagram of their profile and label it.
 3. Add the dried fruit on top to represent the humus, or organic matter, in the topsoil.
 4. Pour a little bit of milk into the cup to simulate rain.
 5. Eat and enjoy!
- Exploring Further:** Bring in extra cereal to represent the different topsoil particles – sand, silt, and clay. Crush it to appropriately represent each particle size.



Animal Needs Farm Charm

- Objective:** Identify needs of animals.
- Materials Needed:** Small jewelry sized bags; yarn; hole punch; blue glitter; red construction paper; brown shredded paper; googly eyes; cornmeal or grits
- Steps:**
1. Make a list of animal needs – air, food, shelter, water, and space (habitat). Discuss how farmers provide these needs to their animals.
 2. Have each student pick their favorite farm animal. Then, give each student a small jewelry bag. In the bag will be items representing that animal's needs.
 3. Have them open the bag and give it a puff of air. This represents the air that the animal needs.
 4. Next, place a pinch of blue glitter in the bag. This represents fresh water.
 5. Place a pinch of cornmeal or grits in the bag. This represents the ground up grain that most farm animals eat. Also place some brown shredded paper in the bag. This represents cut grass, or hay, that farm animals may eat.
 6. Cut a small square from a piece of red or gray construction paper and put in the bag. This represents the barn, or shelter for the animal.
 7. Last, place a googly eye in the bag because farmers keep an eye on their animals' health and well-being.

Exploring Further:

Have students create a Venn diagram comparing and contrasting their needs with animal needs.



Additional Information/Resources and SOI Alignment

You May Use this Poster to Teach the Following Virginia Standards of Learning:

Become an Erosion Expert

- Science:** 3.1, 4.1, 5.1. The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations.
- 3.6 – The student will investigate and understand that ecosystems support a diversity of plants and animals that share limited resources.
- 3.7 - The student will investigate and understand the major components of soil, its origin, and its importance to plants and animals including humans.
- 4.9 – The student will investigate and understand important Virginia natural resources.
- 5.7 – The student will investigate and understand how Earth's surface is constantly changing.

Make it Rain

- Science:** 3.9 – The student will investigate and understand the water cycle and its relationship to life on Earth.

Animal Needs Farm Charm

- Science:** K.7 – The student will investigate and understand basic needs and life processes of plants and animals.
- 1.5 – The student will investigate and understand that animals, including humans, have basic needs and certain distinguishing characteristics.
- 2.5 – The student will investigate and understand that living things are part of a system.

Soil Cereal

- Science:** 3.7 - The student will investigate and understand the major components of soil, its origin, and its importance to plants and animals including humans.

Literacy Connections:

- Amazing Grazing* by Cris Peterson
All Around the Farm by Heather Alexander
Big Red Barn by Margaret Wise Brown
Diary of a Worm by Doreen Cronin
Did a Dinosaur Drink this Water? by Robert Wells
Dirt by Steve Tomecek
Dirt: The Scoop on Soil by Natalie Rosinsky
Down Comes the Rain by Franklyn Branley
Farm Animals by Nancy Dickmann
A Handful of Dirt by Raymond Bial
Seed, Soil, Sun by Cris Peterson
Soil by Christin Ditchfield
Water Dance by Thomas Locker

Useful Websites:

- The Old Farmer's Almanac for Kids,** <http://www.almanackids.com/weather/index.php>
Science in Your Watershed, <http://watersus.gov/wsc/>
Soil Science Society of America, <https://www.soa.org/lessons>
Animal Science Image Gallery, <http://anscgallery.nal.usda.gov/index.php>
Junior Master Gardener, <http://www.jmgkids.us/>
Ecoinvestigators, <http://www.pbs.org/teachers/ecoinvestigators/lesson-plans/>

SoilKIDS,

<http://www.ars.usda.gov/is/kids/>

4-H Virtual Farm,

<http://www.sites.xt.edu/virtualfarm/>

Dig It! The Secrets of Soil,

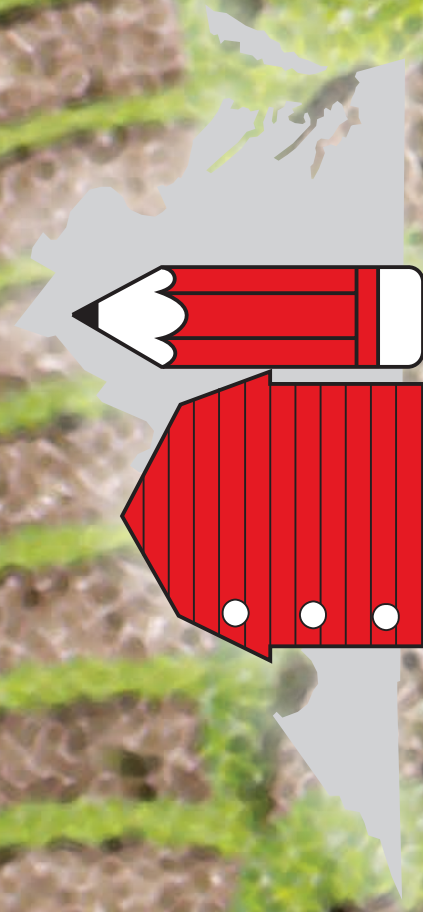
<http://forces.si.edu/soils/index.html>

Additional Extension Ideas: Language Arts

- Describe the farm scene from the perspective of a chicken, bee, or cow.
 - Write and deliver a persuasive speech on erosion.
 - Write a song for the water cycle.
- Social Studies -**
- Research the various careers associated with agriculture. Have students put on a mock career fair.
 - Research the Dust Bowl, its cause and effects. Have students create posters to describe their findings.
 - Have students research and create a timeline for those in the early 1900s. Then create a timeline for advancements in farming.



What's really happening on the Farm



Fair Education Program

Healthy Living

A nutritious, well-balanced diet combined with physical activity is the foundation of good health. Healthy eating means consuming high-quality proteins, carbohydrates, heart-healthy fats, vitamins, minerals and water while eliminating processed foods and saturated fats. Those who want to increase your chances of staying healthy should reduce fat in their diets. It is a well-known fact that overconsumption of fat can lead to excess weight which in its turn increases your chances of developing health problems, including heart disease, hypertension, respiratory issues, diabetes and cancer. Healthy eating also helps support the activities of day-to-day living, promotes optimal body weight and assists in disease prevention. For example, protein rebuilds injured tissue and promotes a healthy immune system while both carbohydrates and fats fuel your body. And, of course, getting vitamins and minerals is essential for support of your body's processes. Vitamins A, C and E, for instance, act as antioxidants and B vitamins help extract energy from the foods you eat. A well balance diet should include all the nutrients necessary for healthy living.



Wild and Woolly Facts: Did You Know?

Years ago, shepherds disliked black sheep because they were less valuable on the market than white ones. Today, a "black sheep" in a family has come to be known as a disgraceful member who shames the rest. One mature ewe produces 7 to 10 pounds enough newly shorn wool each year to make a man's suit. One pound of wool can make ten miles of yarn. There are 150 yards (450 feet) of wool yarn in a baseball. Peaceful sheep, lying in a field, indicate fine weather; if they are restless and baa for no apparent reason, expect rain. To meet a flock of sheep on a trip is an omen of good luck. People once believed that a child with whooping cough would be cured if a sheep breathed on him or her. There are About 1 billion sheep on the planet and about 900 different breeds. Sheep make a bleating sound. A baby lamb can identify its mother by her bleat. The small intestines from 11 sheep are needed to make 1 tennis racket. Sheep prefer running water when they drink. Sheep have poor eyesight but an excellent sense of hearing. When Woodrow Wilson was President, the First Lady had sheep graze on the White House lawn to keep it neat and well-trimmed. President James Madison wore an inaugural jacket made from the wool of sheep raised on his Virginia farm. If you see a sheep on its back, lend a hand! A sheep can't get up from that position. If left on its back too long, it will eventually die. Ewes typically give birth to twins. Sheep grow two teeth a year until they have eight.



Fair Education Program

Word or Phrase	Definition	Visual Representation

Animal Care

Farmers who raise animals, such as cows, chickens, turkeys, sheep, or hogs are called livestock producers. It is the farmer's job to make sure that their animals are well taken care of. Animals rely on farmers to provide them with food, water, shelter, and care to keep them healthy. In turn, people rely on farm animals for food and clothing. All animals share the same basic needs of food and water. Some farm animals may graze on pastureland and might be provided with extra hay or silage. Silage is made when a plant such as corn or grass is cut, finely chopped, and packed tightly to store. The farmer will carefully choose the correct type and combination of grains for their animals in order to give them the best possible nutrition. Additionally, farmers provide their animals with plenty of clean water. In addition to food and water, farmers provide their animals with shelter to protect them from severe weather and to keep them safe. Lastly, in order to keep their animals healthy, farmers will seek the help of veterinarians. Veterinarians are doctors who take care of animals and make sure they stay healthy. Some veterinarians take care of pets like dogs or cats, while others, called large animal veterinarians, specialize in the care of farm animals.

Soil

Soil is one of our most valuable natural resources – useful to both plants and animals. Plants, which provide us with food, clothing, and other materials, live in the soil. Additionally, animals graze in fields and eat feed produced from various plants. Plants grow in the top layer of soil, which is called topsoil. Topsoil is a product of the two lower layers of soil – subsoil and bedrock. Topsoil is best for plant growth because it contains nutrients deposited by humus. Humus is decayed organic matter in soil. In addition to nutrients, topsoil is where plants absorb water and air. However, it takes an average of 100-500 years for an inch of topsoil to form. It is important to take measures to conserve topsoil and prevent erosion because plants grow poorly in subsoil.

Fair Education Program

Water Quality

Water is used by many people in many different ways. But people are not the only ones who need water; it is also a critical resource for crops and animals. The earth, however, has a limited amount of water. The water that the earth has constantly keeps going around and around and around in a cycle. This is called the water cycle, which is made up of five steps: sunlight, condensation, precipitation, evaporation, and accumulation. Because water is so important for farmers there are several things that they can do to conserve it and keep it clean. For example, they might utilize watering systems that put water directly at the plants' roots – this allows more water to get straight to the plant instead of evaporating. A primary goal of agricultural best management practices is to protect waterways and help keep them healthy. Water that grows farm products doesn't stay on the farm. It becomes part of the food we eat and clothing we wear, making consumers the true end users of farm water. California farms consume 8.3 trillion gallons of water in a normal year but farmers aren't using water frivolously on their lawns or taking long showers, according to California Governor Jerry Brown. "They're providing most of the fruits and vegetables of America to a significant part of the world," he said on April 5, 2015 during an interview on ABC's "This Week." California exists in a global economy. The state's farm production feeds more than just its own population. Farm products are imported and exported, based on consumer demand, to provide a variety of food choices throughout the year all around the world. However, if California farm production was limited to meeting only the needs of California residents it would fall short by over 26 percent. As productive as California farmers are, they simply don't have access to enough water to grow all of the food consumed by California's population of 38.8 million people.

California Farm Water Coalition © 2015 | All Rights Reserved

Download the info graph here: <http://farmwater.org/wheredoesitgo.pdf>
<http://drought.unl.edu/DroughtforKids.aspx>

What is the main idea and key details of the video on drought? How is that important to California farmers?

Grapes

Did you know:

- Setting a new record crop value at \$1.76 billion in 2014, California's table grape growers harvested their second largest crop ever, sending 110 million 19-pound boxes of grapes to consumers worldwide.
- There are about 475 table grape farming operations in California
- California grapes are your local grapes! 99% of the commercially grown table grapes in the United States are grown in California.
- Grapes from California are available May-January.
- Grapes are considered berries, with an average of 100 berries on a bunch.
- If left alone, a grapevine will spread 50 feet or more.
- One of the most popular Chinese tongue twisters (chi putao bu tu putao pi) means "When you eat grapes, don't spit out the skin." Turns out that's a good piece of advice! Grapes are a source of beneficial phytonutrients, which are found in the skin as well as the flesh and seeds of the grape. One of the most widely known phytonutrients, resveratrol, is being studied around the world for a vast array of promising potential health benefits.
- A Spanish tradition called "the twelve grapes of luck" dates back to 1895 and consists of eating a grape with each bell strike at midnight of January 1. This leads to a year of prosperity.

<http://www.tablegrape.com/didyouknow.php>

Fair Education Program

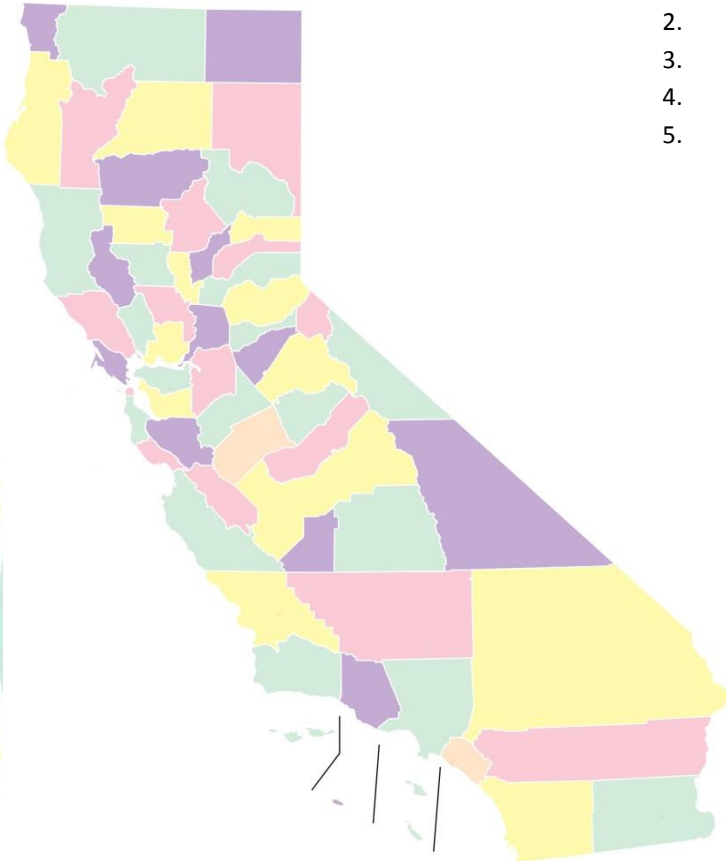
Fresno County

This is what Fresno County looks like.

It is found in the heart of the San Joaquin Valley.

Name 5 crops grown in Fresno County.

- 1.
- 2.
- 3.
- 4.
- 5.



This is a map of California showing all the counties in the state.

Things to Do:

1. Find Fresno County and color it in.
2. Is Fresno County the smallest county?
3. How many counties are there in California?
4. Fresno County is located in the (top, middle, bottom) part of California

Fair Education Program

Did you know??

In ONE day Americans eat...

170 million eggs

90,000 bushels of carrots

2.8 million pounds of fresh cucumbers

12.5 million pounds of cheese

Break the secret code to answer these questions

Thanks to modern farming practices, either with chemicals or with natural predators or some of both, your fresh fruit and vegetables almost always come-BUG-FREE! But in the old days that wasn't always true. Do the problem, find the letters and solve the puzzle.

Secret Letter Code

1	2	3	4	5	6	7
C	E	I	O	U	W	Y
8	9	10	11	12	13	14
B	A	D	F	G	H	Q
15	16	17	18	19	20	21
J	K	N	R	L	M	P
22	23	24	25	26		
S	V	T	Z	X		

$12+12$

$10-1$

8×2

$12-9$

$9+8$

$7+5$

$5+4$

4×2

$5-2$

$20+4$

$3-1$

$4+5$

$20-3$

$5+5$

$6+5$

$2+1$

$10+7$

$20-10$

$7-4$

$19-2$

$11+1$

$30-17$

$8+1$

$29-10$

$4+7$

$19-10$

$14-8$

$8-4$

$27-9$

$21-1$

Fair Education Program

Break the secret code to answer these Ag questions

California's number one farming county is?

13-2	9+9	14-12	19+3	9+8	2+2
_____	_____	_____	_____	_____	_____

It's number one crop most years is?

24-12	15+3	19-10	11+10	1+1	11+11
_____	_____	_____	_____	_____	_____

Most of the 250 crops grown in Fresno County can be seen where?

8+1	12+12	25-1	7+6	14-12	6+5	11-2	13-10	9+9
_____	_____	_____	_____	_____	_____	_____	_____	_____

Secret Letter Code

1	2	3	4	5	6	7
C	E	I	O	U	W	Y
8	9	10	11	12	13	14
B	A	D	F	G	H	Q
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J	K	N	R	L	M	P
22	23	24	25	26		
S	V	T	Z	X		

Fair Education Program

Scavenger Hunt

(Teacher Instructions)

Purpose

The purpose of this activity is for students to become familiar with the fairgrounds and to learn how agriculture is an important industry in California. Students will enjoy their day at the fair as they seek answers to the Scavenger Hunt.

Concepts

1. Fairs display items represent various talents of local community members.
2. Agriculture is an important part of everyday life.
3. There are many different careers associated with fairs and agriculture.

Materials

1. A field trip to the local fair.
2. "Scavenger Hunt" student worksheet (1 for each student).
3. Pen or pencil for each student.
4. Wristwatch with a second hand.
5. Teacher and parent volunteers.

Background Information

This activity will help students become familiar with their local fair and learn that agriculture is an important industry which affects their daily lives. The following information may be helpful as you and your students complete the scavenger hunt.

1. Students should work with a partner to complete the scavenger hunt. Discuss appropriate behavior and judgment when talking to fair personnel.
2. Students are asked to identify several animals by gender and name.
 - sow = female pig that has had an offspring.
 - boar = male pig that has not been neutered.
 - ewe = female sheep that has had an offspring.
 - ram = male sheep that has not been neutered.
 - doe = female rabbit or goat that has or has not had off spring.
 - buck = male rabbit or goat.
 - bull = male cow that has not been neutered.
3. On average, a dairy cow will eat 36 pounds of hay, 15 pounds of grain and drink 20 gallons of water per day.

Procedure

1. Distribute and discuss the Scavenger Hunt activity card prior to the day at the fair.
2. Review and explain the directions and key on the activity card.
3. Collect activity cards upon completion of hunt at The Big Fresno Fair.
4. Review and discuss the answers in class the following day. Distribute an appropriate prize to each student who successfully completed the scavenger hunt according to your criteria.

Conclusion

The agricultural industry is an important part of your local fair. The fair is a means by which we can learn about agriculture, the many talents represented by the products displayed, and the richness of our community.

Variations

1. Play BINGO with game card.
2. For younger students, enlarge the activity card to 11" X 14" so students have more room to write or cut off the squares and glue onto 12" X 18" sheets of paper.
3. Pair younger students with older students. Using this educational buddy system, have students complete the scavenger hunt.

Extensions

1. Have students create two more questions that can be added to the scavenger hunt card.
2. Play a quiz game such as "Jeopardy" with the information from the game card.

Fair Education Program

Name: _____

Date: _____

Scavenger Hunt

Directions

1. With your class and teacher, go to your local fair.
2. Use the key below as a guide to help locate the information needed to answer the questions on the Scavenger Hunt game card. The key corresponds to the letters in the upper right-hand corner of each box on your scavenger hunt.
3. As you find the answers to the scavenger hunt, fill them in on your worksheet. Use the back of the scavenger hunt sheet if you do not have enough room to write the answers in the boxes.
4. Be prepared to explain and discuss your answers.
5. Follow your teacher or guide's instructions.
6. Follow all fair rules and regulations and be on your "best behavior" at all times.

Key

Use the key to identify the letter in the upper right hand corner of each square on the scavenger hunt game card. This will help you find the appropriate place on the fairgrounds to locate the answers to the question.

AG = Agriculture

HA = Home Arts

G/M = Gems & Minerals

A/P = Arts & Photography

F = Floriculture

LP= Livestock Pavilion

JR = Junior Exhibits

V = Various Areas

CP = Career Path

Conclusion

List one thing you learned today that you did not know before attending the fair.

Fair Education Program Scavenger Hunt

LP	A&P	AG	F
Name two breeds of cattle that you saw at the fair. _____ _____	Find a drawing or photograph of a fruit or vegetable. Name a product that can be made from the item you find. Item: _____ Product: _____	Name two fruits or vegetables which are consumed with the skin on. _____ _____ Name two fruits or vegetables that are peeled. _____ _____	What kinds of flowers are displayed in the hot houses? _____ _____ Name your favorite. _____
AG	HA	LP	LP
What is one specific crop that most large farm animals eat? _____ Is it grown in your county? Yes _____ No _____	Find a jam or a jelly made from a red fruit. Name the fruit. _____ Count how many jars of jam that were made from this fruit. _____	Name one animal at the fair today that has horns. _____ Name one thing the material from the horns is used for. _____	What breed of rabbits is combed for its fur? _____ What is the combed fur used for? _____
V	GM	AG	LP
What is the theme of the fair and how does it relate to agriculture? _____ _____	What is the name for a person who studies gems and minerals? _____ How are rocks polished? _____	List three things at the fair today that you find in a salad. 1. _____ 2. _____ 3. _____	What is the name of a: Mother pig _____ Mother sheep _____ Male rabbit _____ Male pig _____
LP	LP	V	HA
Find the heaviest animal at the fair today. What is it? _____ How much does it weigh? _____ How many children would it take to equal this weight? _____	Find out how much food a cow must eat and how much water it must drink each day. _____ Food _____ Water _____	Find a food at the fair that uses products from wheat, corn and swine. _____ _____	Find your favorite quilt at the fair. Is the basic pattern circles, squares, triangles or something else? Circle the correct answer. _____ What fiber is it made from? _____
CP	JR	JR	JR
Name an area that tells how a student might prepare for a career. _____	Name a student that exhibited a project and won a ribbon at the fair. _____	Name two projects that are exhibited that require specific skills. _____ _____	Name the skills that were needed to make each project. _____

A&P = Art & Photography
GM = Gems & Minerals
F = Floriculture

AG = Agriculture
CP = Career Path

HA = Home Arts
JR = Junior Exhibits

LP = Livestock Pavilion
V = Various Locations

Fair Education Program

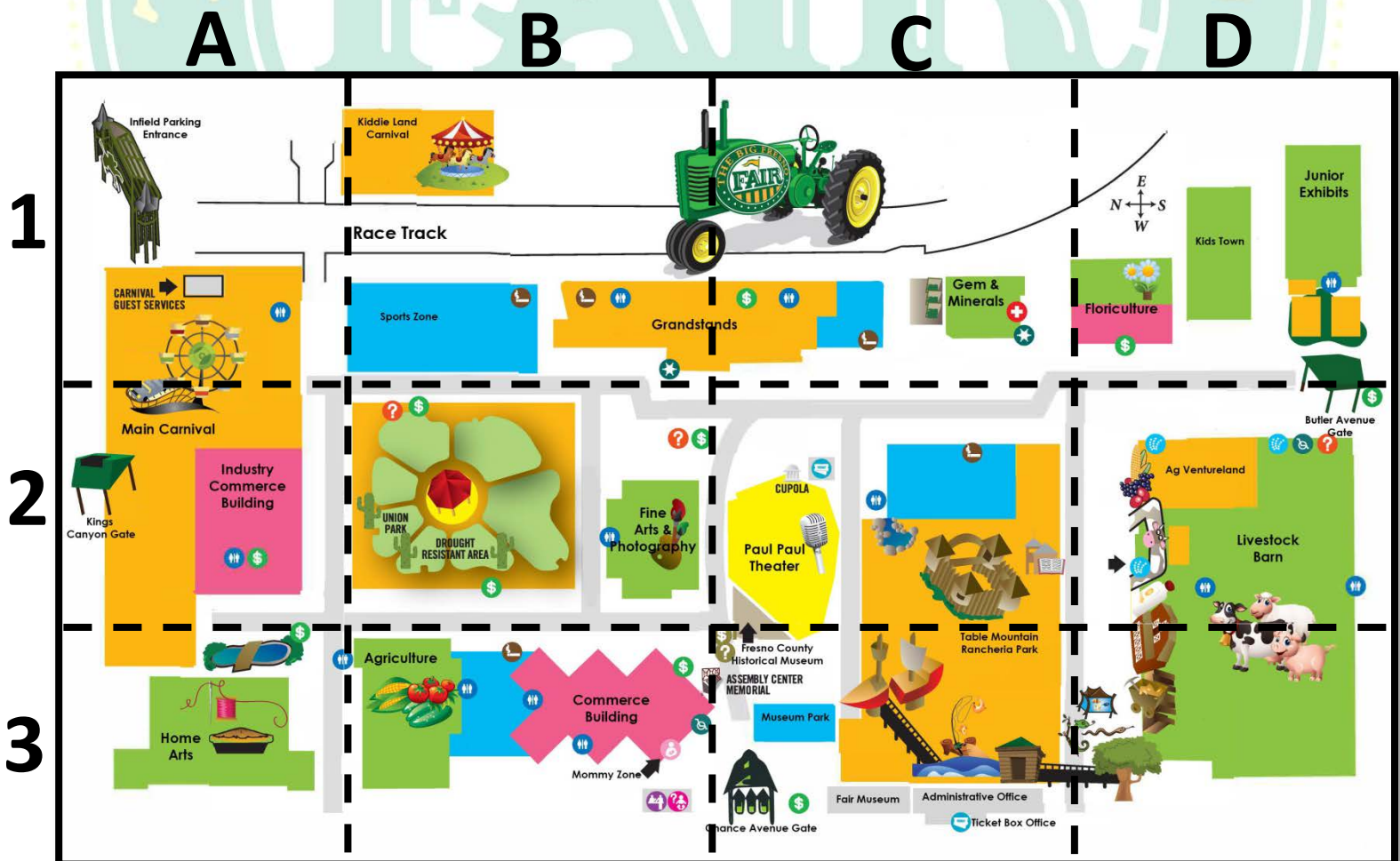
Social Science

Pre/Post-Fair

1. Have a guest speaker from the community - such as a farmer, rancher, cotton gin representative, etc.
2. Design a map-grid like the one below to orient the students to where buildings and services are at The Big Fresno Fair. Have the student answer the following questions
In what square would you find a Police Officer?
In what square would you find a nurse?
In what square would you find a Home Economist?
In what two squares would you find an Entertainer?
In what square would you find a Mechanic?
In what squares would you find products made by a Chef /Cook?
In what two squares would you find a Farm Advisor?
In what four squares would you find a Salesperson?
In what square would you find projects made by students preparing for a career as an architect?

Post Fair

1. Have students report on one commodity. Ask them to write letters to various organizations asking for information on their subject.
2. On a large class map or desk maps, locate the San Joaquin Valley, Fresno County and the communities which had booths at the fair.
3. Using a salt, flour, and water mixture, make a map of Fresno County. Mark the communities which have displays in the Ag building. Make a key for the map which shows what crops each community displayed.



Fair Education Program

Teachers Resources

"The Big Fresno Fair History"

Over 100 years ago, in 1882, a group of prominent Frenans took the lead and formed the Fresno Fairgrounds Association. Ranchers and growers of the San Joaquin Valley had long recognized the quality and variety of area products and livestock, and that recognition and pride resulted in the establishment of the Valley fair. One hundred acres were purchased in February, 1883 for \$5,000 from land developer Thomas E. Hughes, later known as the "Father of Fresno." Nearly every fall since 1884 the Central San Joaquin Valley has come alive with a celebration of its agricultural harvest known as THE BIG FRESNO FAIR.

The first fair, beginning on October 7, 1884, ran five days and consisted mainly of a horse racing meet for trotters, a livestock department and few produce exhibits, including a 105 pound pumpkin from the Hughes Ranch. "Confidence", a three year old race horse was favored to win the opening day handicap, where a purse of \$100 went to the winner. Many of Fresno's first families were in the grandstand, but some were elegant and preferred to view the proceedings from their carriages parked in the infield. Perhaps your great grandparents thrilled to the opening race at The Big Fresno Fair.

Managed by the Fresno Fairgrounds Association and its founding father, Dr. Lewis Leach, exhibits and events continued to multiply until 1893. Then the fair went through a period of change and uncertainty.

With the hiring of manager Clyde Eberhart in 1910, The Big Fresno Fair began to take hold as a tradition. In 1920 the Fresno Chamber of Commerce took over the fair's management and continued until 1931. The Fair floundered briefly at the time but was rescued by the Fresno County Junior Farm Bureau, a group of young men who secured a \$300 loan and resurrected the Fair. They were responsible for many changes, such as clean fairgrounds and first-rate exhibits. Fair attendance grew by leaps and bounds. In the early thirties the practice of charging admission for exhibits and events inside their grounds was abolished and The Big Fresno Fair adopted a "One-Pay-Gate". This policy was so successful that soon most fairs throughout the nation adopted it. Today, at the Fresno Fair, Most entertainment and special events are still free once the fairgoer has paid the entrance gate admission.

World War II halted the fair for six years, from 1942 to 1947. The Fairgrounds first became a temporary holding facility for Japanese Americans interned by the U.S. Government, and later was a military base for processing new recruits.

In 1948 the Fair emerged reborn and continued to grow over the next quarter-century and today ranks as one of the largest fair in California. Located in what is now the world's agricultural capital, the Big Fresno Fair attracts over 650,000 attendees each year. You may call The Big Fresno Fair Office for any additional information, (559-650-FAIR).

Fair Education Program

Fresno County Products

1. Cotton

Fresno County and the San Joaquin Valley raise fine cotton. Cotton is one of the most important crops in Fresno County. Cotton is used for making clothes and for many other things.

Fresno has a good climate for growing cotton. The soil is good and there is plenty of land. There is water to irrigate the cotton.

Cotton seeds are planted in spring. They are planted close together in the rows. When the plants are about six inches high the cotton is chopped. The choppers thin out the extra plants and the weeds that have started to grow. The plants that are left are about 10 to 14 inches apart. Later the farmer uses a cultivator to get rid of the weeds and keep the soil loose.

To grow a good crop of cotton the plants need to be fertilized and watered several times during their growth. The plants also need to be sprayed or dusted to get rid of harmful insects.

When the plants are about three feet tall, white flowers can be seen on the plants. After a few hours the flower turns pink. The bloom falls off the next day and leaves a tiny cotton boll. This boll is a little pod. It has seeds beginning to grow inside it. Little damp fibers grow from these seeds and fill the boll. When the boll is ripe, it opens and looks like a snowball. Cotton can be picked by hand but most is now picked by machine. The cotton is cleaned at the mill and the seeds are removed. Spinning will turn the cotton into thread.

A cotton fiber looks like a flattened, twisted tube. The many little twists in the fiber are important. They help hold the fibers together when they are spun into yarn or thread. A cotton fiber is actually as strong as a steel wire of the same thickness.

Cotton is used for many things. Cotton is woven into cloth. Cotton cloth is used for making clothes, curtains, towels, sheets, and many other things.

The seeds of the cotton plant are crushed to get the oil out. This is used for cooking. The seeds are used for animal food.



2. Alfalfa

Alfalfa, a member of the pea family, is cultivated extensively as food for cattle and horses. It is grown in large irrigated fields and is a hardy plant, adaptable to most climatic and soil conditions. Alfalfa is considered a soil building crop, since it returns nitrogen to the soil, but it may also deplete the soil of certain other elements.

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3. Oranges

Oranges, a citrus fruit, probably came from China or India. They need a warm climate and Fresno provides that need. Oranges are a nutritious fruit containing vitamins A, B, and C, sugar, citric acid and mineral salts. They have a thick rind, are divided into segments, and filled with juicy pulp.

The orange tree is an evergreen and is planted in groves for commercial purposes. The trees usually bloom in spring with sweet smelling blossoms. The fruit can range from pale to very bright orange in color. Oranges can take from 8 to 15 months to ripen. Trees are about 20 feet in height, and can bear fruit for 50 years.

4. Almonds

The almonds are one of the oldest and best-known edible nuts. Almonds grow best where there are long hot summers and mild, but not warm, winters. The nut harvest is largest when the rainfall during the season is low and the trees are properly cultivated and watered.

There are two kinds of almonds, the sweet and the bitter. It is the sweet almond that is used for food. The oil of bitter almonds is used for a food flavoring. The shells of almonds are called hard, soft, or paper shells. The paper-shelled almonds are especially popular.



5. Peaches

The peach originated in China thousands of years ago. It has a thin outer skin, a soft juicy pulp, and a single seed in the center. Peaches are grouped as freestone or clingstone. Freestone peaches have a pit that easily breaks away from the flesh. The pits in clingstone peaches are firmly attached to the flesh.

Peaches are not grown straight from seed because the fruit of a tree grown from seed may be very different from the fruit of the parent tree. Instead the trees are budded onto a root stock. Peach trees are more heavily pruned than other fruit trees because the color of the fruit improves with the amount of light that reaches it. The young peach trees are usually pruned into the shape of a vase or bowl.

6. Tomatoes

The tomato is a native to South America. They grow best in a warm climate with plenty of sunlight. They are easily killed by frost. If the temperature is warm and the sky is sunny, the tomato will thrive in almost any kind of soil.

Probably no other fruit has as many uses as the tomato. It can be served raw, stewed, baked, fried, or in meat dishes.

Tomatoes are made into soups, juice, catsup, relish, pickles, sauces and paste. Tomatoes are an excellent source of vitamins A and C.

7. Livestock

Livestock are domestic animals raised for their working ability or for their value as a source of food and other products. The animals raised in greatest number in the Fresno area include beef and dairy cattle, horses, sheep, hogs, chickens, and turkeys. Livestock came to Fresno County with the earliest settlers. The soil, climate and availability of food have all contributed to the growth of this industry. Today livestock are as important to our livelihood as they were to the early settlers and maybe even more so.

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Animal Facts

Goats

1. Buck - Is a male goat
2. Doe - Is a female goat
3. Wether - Altered male goat
4. Kid - A goat under the age of 6 months
5. Kidding - Giving birth to their young
6. Udder - Milk gland, where their milk comes from
7. Gestation - Five months



The goat is part of a very large family of animals called "RUMINANTS". The special name that they have is due to the makeup of their stomach. Animals in this class are very different than any other animal. They have four stomachs and have no teeth on the upper jaw. Many times as you walk through the barns you will see these animals chewing their "Cud".

The "Cud" is re-chewing of food. If you did not know what they were doing you may mistake them for chewing gum. The reason that they have to re-chew their food is because of the special stomach. These animals spend most of their time chewing their food so that it can easily be digested.

The pigmy goat is only 18-20 inches tall. They also have one other very special feature, and that is that they only come in four colors. The colors are: Gray, Black, Cream and Agouti. So as you walk through please look for these special critters.

There are 6 breeds of goats:

1. Alpine – Can be any color with erect ears.
2. Toggenburg – Brown with white stripes on the face and erect ears.
3. Oberhasli – Red brown with black stripes on the face and erect ears.
4. Saanin – White only, no other colors allowed with erect ears.
5. Niobeian – Any color with long pendulous ears with a roman nose.
6. Lamancha - Any color with very short ears, there are two types of ears, the very, very short ears are called "gopher" ears and the longer ones are called "cookie" ears. This is the only breed developed in the United States.

We have Alpines, Lamanchas, Nubians, Toggenburgs, and Saanins in the barn. Most births are usually twin or triplets. Though singles and quadruplets are common. This is called a litter. Goats give milk for human consumption and to make cheese, ice cream, and yogurt to name a few things. Kids weight about 5 pounds at birth.

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Sheep

1. Ram – Is a male sheep
2. Ewe – Is a female sheep
3. Lamb – Is a young sheep of either sex
4. Wether – Is an altered male
5. Sheep are raised for both meat and wool.
6. We shear sheep to harvest the wool. This is done once a year.
7. Gestation period is four months.
8. Twins and single births are normal. Triplets are less common.
9. When a ewe has a baby we call that lambing.
10. Sheep are born with long tails which are sometimes docked before they develop any nerves.
11. White face breeds are usually wool breeds. Black face breeds are usually used for meat.
12. Sheep are ruminants having 4 stomachs and chew a cud.
13. A cud is food which is being chewed a second time after being held in the first stomach.
14. Wool breeds are: Rambouillet, Cheviot, Dorset, and Columbia. Sheep usually considered meat breeds but which do produce a fine grade of wool are Corriedale, Suffolk, Southdown and Hampshire.



Swine

1. Swine – Also referred to as pigs or hogs
2. Herd – A group of swine
3. Boar – Is a male hog
4. Sow – Is a female hog
5. Pig – Is a very young pig, either sex
6. Gilts – Young female animals
7. Barrow – Altered male
8. Used for meat, such as bacon, ham, sausage
9. Hogs come in many different colors: all white, all red, all black, black with one or two white front legs plus a belt of white, and white with black or red spots
10. Pigs are shown with a cane and loose in the ring
11. The notches in some of the ears designate what farmer they belong to
12. Gestation period is three months, three weeks
13. A pig usually weighs about two pounds at birth
14. 10-12 in each litter
15. When a sow gives birth we call that farrowing
16. Pigs are one of the cleanest animals in the barn
17. Pigs have a simple stomach, like man, and eat bakery waste (bread, rolls, etc.), barley, beans, carrots, beets, turnips, oats, peanuts, potatoes, rice, sunflower seeds, heat, and some ground alfalfa.



Fair Education Program

Cattle

1. Bull - Is a male, any age
2. Cow - Is a female which has had a calf
3. Calf - Is a male or female less than six months of age
4. Steer - A castrated male (removal of testes)
5. Heifer - A female which has not yet given birth to an offspring
6. Cattle are raised primarily for meat and milk.
7. Gestation period is nine months.
8. Single births are the norm, but the birth of twins occurs occasionally.
9. When a cow has a calf it is called calving.
10. Bull calves are usually castrated unless kept for future breeding purposes.
11. Major breeds such as Hereford, Angus, Shorthorn, Brahman and Charolais are often crossbred, as well as lesser known breeds.
12. Cattle are ruminants and chew a cud.
13. A cud is food which is chewed a second time after being held in the first stomach.



The following is a partial list of the more common known beef breeds: Hereford, Angus, Charolais, Brahman, Gelviah, Beefmaster, Simmental and Shorthorn.

Dairy breeds: Holstein, Guernsey and Jersey are the most common in this area, but there are many other breeds raised here.

Examples of the many and varied uses of beef

- | | | |
|-----------------|-----------------------------|----------------------------|
| 1. Candle | 12. Paints | 23. Boots & shoes |
| 2. Cellophane | 13. Plastics | 24. Bandages |
| 3. Ceramics | 14. Shoe cream | 25. Wallpaper |
| 4. Cosmetics | 15. Shaving cream | 26. Sheetrock |
| 5. Crayons | 16. Soaps | 27. Emery boards |
| 6. Deodorants | 17. Textiles | 28. Glues |
| 7. Detergents | 18. Pet foods | 29. Artist's paint brushes |
| 8. Insecticides | 19. Floor wax | 30. Photographic film |
| 9. Insulation | 20. Horse & livestock feeds | 31. Combs |
| 10. Linoleum | 21. Leather sporting goods | 32. Imitation ivory |
| 11. Perfumes | 22. Luggage | 33. Piano Keys |

Beef byproducts for mechanical types of uses

1. Hydraulic brake fluid
2. Airplane lubricants and runway foam
3. Various machine oils and viscous fluids
4. Steel ball bearings containing bone charcoal
5. Car polishes and waxes
6. Textiles for car upholstery



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Pharmaceutical uses of beef

1. Insulin – For diabetes
2. Pancreatic – Aids digestion
3. Glucagon – Treats hypoglycemia
4. Tyrosine and Chymotrypsin – For burns and wounds
5. Bone Marrow – For blood disorders
6. Soft Cartilage – For plastic surgery
7. Bone Meal – Calcium and phosphorus source
8. Blood Plasma – For hemophilia and kills some viruses
9. Blood Albumin – RH factor types
10. Trombin – Blood coagulant
11. Iron – For anemia
12. Intestines – Medical sutures
13. Prolactin – Promotes lactation
14. Pressor Hormone – Regulates blood pressure
15. Vasopressin – Controls intestinal and renal function
16. ACTH – For arthritis and allergies
17. Heparin – Anti-coagulant
18. Liver Extract – Treatment of anemia
19. Vitamin B-12 – Prevention of B-complex deficiencies

99% of every beef animal is used for beef and byproducts

Rabbit

Many of us think of Peter Cottontail when we see a rabbit but the Cottontail is only one breed in the rabbit world. They range in sizes from large to small. Rabbits are used for many things, their meat as well as their fur.

1. Buck – Is a male rabbit
2. Doe – Is a female rabbit
3. Junior – Is a young rabbit under 6 months
4. Intermediate – Is a rabbit at the age of 6-8 months
5. Senior – Is a rabbit older than 6 months
6. Fryer – Is used for meat 10 weeks of age

