

Approved January 31, 1989
Date

MINUTES OF THE Senate COMMITTEE ON Agriculture

The meeting was called to order by Senator Allen at
Chairperson

10:10 a.m./~~p.m.~~ on January 26, 1989 in room 423-S of the Capitol.

All members were present except: Senator Doyen (excused)
Senator Harder (excused)

Committee staff present: Raney Gilliland, Legislative Research Department
Jill Wolters, Revisor of Statutes Department

Conferees appearing before the committee: Barbara Moyer, Member Board of Directors of
Kansas Foundation for Agriculture
in the Classroom
Becky Koch, Administrator, Kansas Foundation for
Agriculture in the Classroom
Maureen Hall, Kansas Cooperative Council

Senator Allen called the committee to order and introduced Barbara Moyer to discuss the Kansas Foundation for Agriculture in the Classroom.

Ms. Moyer gave copies of her information to the committee (attachment 1). Ms. Moyer then introduced the new and second administrator for the foundation, Becky Koch.

Becky Koch gave copies of information to the committee (attachment 2). Ms. Koch explained plans for future Ag in the Classroom classes to be held at the campus of Kansas State University and in Kansas City with the possibility of making the class available in another Kansas town. Ms. Koch told that with new space the class would now be accept 25 students instead of 15 as in the past. Farm families adopting a classroom have increased from 15 to 45 this schoolyear. Ag-Citing activities at the Kansas State Fair have increased as well as participation; also, more information is available for teachers to help them teach agriculture in the classroom. Ms. Koch explained that Kansas materials and guidelines are being used as Ag in the Classroom gets organized in other states. Ms. Koch expressed appreciation for support of Ag in the Classroom and enthusiasm for future plans as more support is given to the program and new plans and information becomes available. Also, plans are being worked on to have an Ag in the Classroom Week at the same time the state has Agriculture Week.

The Chairman thanked Ms. Moyer and Ms. Koch and then called on Maureen Hall.

Maureen Hall gave copies of testimony (attachment 3) to the committee and explained that in his absence she was presenting comments for Joe Lieber in support of Ag in the Classroom and the request that the Legislature continue to support the program.

The Chairman called attention to committee minutes.

Senator Daniels made a motion that the committee minutes of January 25 be approved. Seconded by Senator Lee. Motion carried.

Senator Allen adjourned the committee at 10:54 a.m.

STATEMENT

TO THE SENATE COMMITTEE ON AGRICULTURE
Senator Jim Allen, Chairman

RE: Kansas Foundation for Agriculture in the Classroom
January 26, 1989
Topeka, Kansas

BY: Barbara L. Moyer, Member
Board of Directors

Chairman Allen and members of the Committee:

We appreciate the opportunity to appear before you and review the Kansas Foundation for Agriculture in the Classroom program.

I am Barbara Moyer, a member of the Board of Directors and Past Chairman of the Foundation. I work for Kansas Farm Bureau. We regret that due to illness and another obligation our current Chairman, Mardelle Pringle who represents KLA and KS CattleWomen and Vice-Chairman Joe Lieber who represents KS Cooperative Council are unable to be here today.

It is a privilege to come before you to share the accomplishments of the Foundation and to inform those of you who are new to this committee what the Ag in the Classroom program is.

As a brief background, the United States Department of Agriculture introduced the Ag in the Classroom concept in 1982 and '83 at various regional meetings throughout the United States. The idea is to educate young people grades K-12 about agriculture, not by establishing a new, separate curriculum, but by offering supplemental materials that can be integrated into the existing disciplines of math, science, English, geography, economics, current events, social studies, art, music, etc.

The USDA intended for each state to establish a program, with the help of suggested guidelines, that would suit the individual state's needs. This effort would be coordinated through the USDA, but the program, specific goals and projects would be grassroot in nature and individualized according to the needs at the state and local levels.

A group of interested Kansans attended the first regional meeting in Lincoln, Nebraska in August 1982 and made a commitment to establish such an effort in Kansas. In December of 1982 a Kansas Task Force of 21 members was formed.

This initial group envisioned a plan for Kansas that would be solid, long range in nature, comprehensive and of high quality. It soon became apparent to the group that a task force would not be the best structure to accomplish these goals. After investigating several possibilities a not-for-profit foundation was chosen. On July 5, 1983, the Task Force became the Kansas Foundation for Agriculture in the Classroom, registered with the Secretary of State. Kansas was the first state to have such a structure.

*Senate Agriculture
1-26-89
attachment 1*

The two main purposes of the Foundation are:

1. to provide for Kansas students an understanding and appreciation of the food chain which is the foundation of human life and
2. to promote the well-being of agriculture as a necessary forerunner to the well-being of America.

The first three years the Foundation and Board of Directors met frequently to set goals and chart the course for the organization. The first major goal became reality when in June, 1984, eight teachers, a university professor and a journalist worked three weeks to write a curriculum guide for K-12 teachers. The same teachers pilot tested this guide during the 1984-85 school year and revised it in March of 1985. Integrating Agriculture into the Classroom, etc. (each teacher creates), was printed in May of 1985. A materials catalogue of resources was also printed to supplement the curriculum guide.

The major concepts included in the curriculum guide are:

- * Agriculture is the business that provides our food, clothing, and shelter.
- * Agriculture is interdependent with the well-being of society in Kansas, the United States and the world.
- * Agriculture is a vital, dynamic system shaped by research and development
- * Agriculture is influenced by government
- * Agriculture is interdependent with the environment and uses natural resources.
- * Agriculture is historically significant.

Other states have used our curriculum guide as a model and many states have used our articles of incorporation and bylaws to form foundations in their states.

The curriculum writing group and the members of the Foundation believed the guide should not be handed out without instruction, as it probably would be used very little that way. The first two weeks of June 1985 saw the second major goal of the Foundation come into being, a two-week summer course for graduate credit was held at Kansas State University to train teachers how to integrate agriculture into their classroom. Twenty teachers attended this first class and their excitement and enthusiasm were beyond our wildest dreams. Testimony from the teachers included such statements as, "This was by far the best in-service training I have ever attended in my tenure as a classroom teacher" and "You really made learning about agriculture fun".

Since that time we have added an additional class held in the Kansas City area. In the four years the classes have been offered, 88 teachers have completed the course.

Other accomplishments of the Foundation include:

- * Purchase of a professional display that has been used dozens of times to tell the Ag in the Classroom story at exhibits, meetings, trade shows, conferences and at Ag Day here in the Capitol.
- * The development of a State logo by modifying the National Ag in the Classroom to enclose it within the outline of the State of Kansas.
- * Over 130 Farm and Food Byte software computer ag programs for grade schools have been distributed in Kansas. The Foundation reviewed this software developed by an Iowa educational firm and had it revised and tailored made for Kansas.
- * A research project to assess the agricultural knowledge among Kansas 6th, 9th, and 12th grade students was completed. This was the first such study done and the results have been shared with other states at the National Ag in the Classroom meeting in Washington D.C. sponsored by the USDA.
- * Conducting three Ag-Citing Experiences at the Kansas State Fair reaching an estimated 5000 students.
- * Developing County Ag-Citing Experience Kits. About 35 have been distributed in Kansas.
- * Printing and distributing two newsletters twice yearly, one to teachers and one to interested volunteers.
- * Beginning an Adopt a Classroom program that now has 42 farm families corresponding with classrooms about their farm.
- * Being represented by at least one Foundation member at the National AIC meeting in Washington every year.
- * Several Foundation members have been on the program for the National meeting.
- * Assisting the Belles of the American Royal develop programming for students attending the American Royal.
- * A "Day on the Farm" how to kit is available

I would like to point out that these achievements have been made as a result of a very dedicated and hard working group of Foundation members and Board of Directors, including such distinguished members as your colleagues: Senator Don Montgomery, Senator Sheila Frahm, Senator Janis Lee, Representative Jo Ann Pottorff, and former Representative Jack Beauchamp.

Agriculture in the Classroom in Kansas is genuinely a team effort. The Foundation brings together representatives of agriculture, organizations and educational groups, legislators, and educators and individuals who support the effort. The Foundation's members work together, putting aside their other differences, to strive toward a common goal--Educating children about agriculture.

And, let's not forget the many, many volunteers across the state who are not members of the Foundation, but participate in the programs and support it financially. Ag in the Classroom in Kansas truly is a grassroots effort.

In the beginning years all of the work of the Foundation was done by volunteers, but as more and more projects were added it became apparent if we wanted to maintain the standard of quality we would need some regular staff support. The College of Education at Kansas State University needed a halftime staff person to work with the Center for Rural Education and Small Schools. We were fortunate they agreed to share a staff person with us, allowing us to pay the part-time salary, but furnish us office space. Our staff person would also have access to computers, typewriters, the graphic arts services and other thing the College of Education could provide to us as reasonable costs.

This has been a good arrangement and we recently hired our second "Administrator" after Fran Parmley resigned to move to Colorado. It is my pleasure to introduce our new Administrator, Becky Koch. Becky is not new to the Foundation. As a graduate student she conducted the study I mentioned earlier to assess students knowledge about agriculture. She also served as a member of the Foundation when she worked for the Kansas Wheat Commission. She is going to tell you about our accomplishments this past year and our plans for this year and the future.

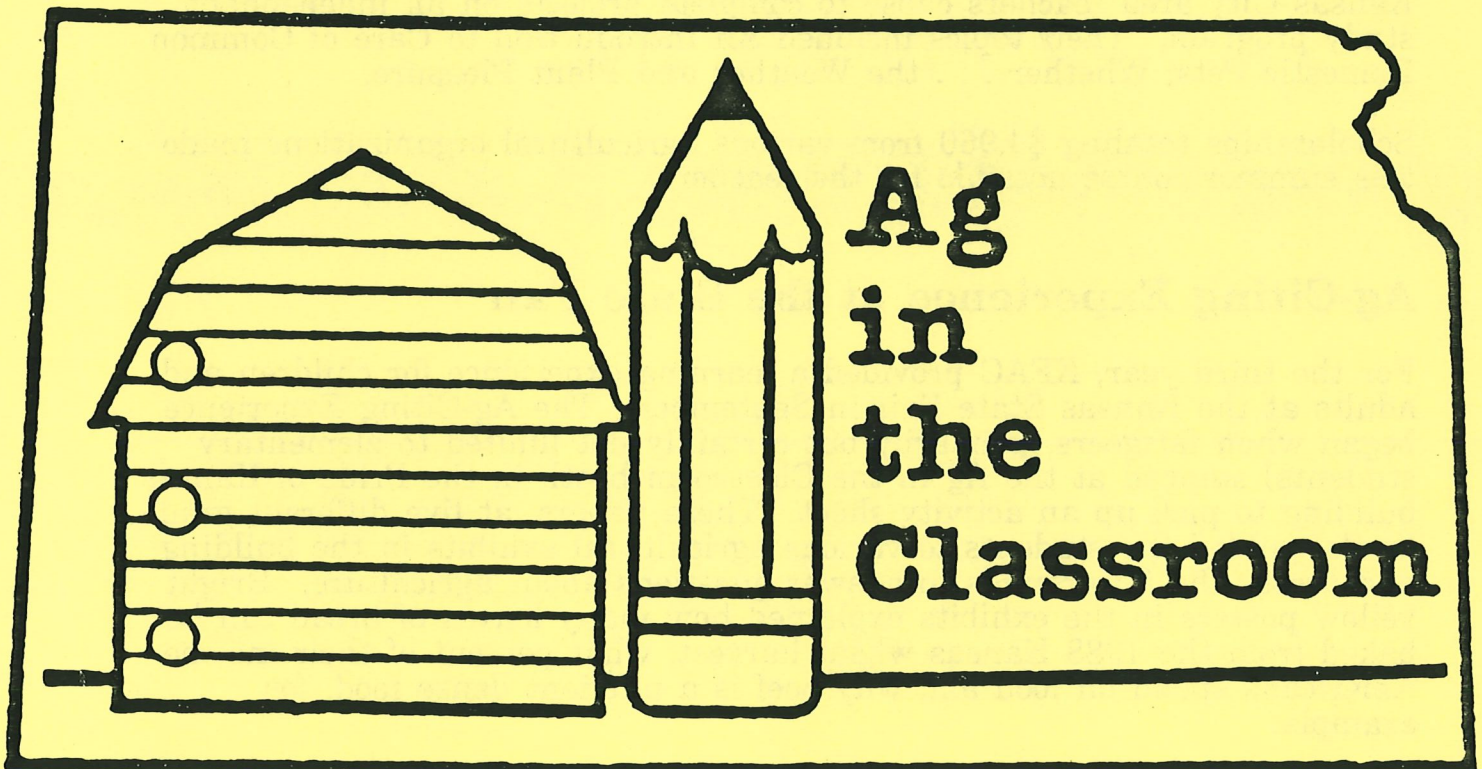
Kansas Foundation for Agriculture in the Classroom

In a 1985 assessment, the Kansas Foundation for Agriculture in the Classroom learned that only 30 percent of Kansas sixth graders know our state's wheat is harvested in the summer, just 28 percent of the eighth graders understand the Homestead Act and fewer than 11 percent of the 11th graders realize that beef production is the No. 1 industry in Kansas.

These findings reinforced the need to carry out the foundation's purposes:

1. To provide for Kansas students an understanding and appreciation of the food chain which is the foundation of human life, and
2. To promote the well-being of agriculture as a necessary forerunner to the well-being of America.

The Kansas Foundation for Agriculture in the Classroom was founded in 1983 to help educate K-12 students by integrating information about agriculture into the science, math, English, social studies, art, music and other courses already taught. This integration teaches children how the food, fiber and forestry of agriculture are strongly interwoven into their lives.



*Senate agriculture
1-26-89
attachment 2*

1988 KFAC Highlights

Summer Courses

Integrating Agriculture into the Classroom was offered to K-12 teachers through Kansas State University for the fourth year. For two weeks in June on the Manhattan campus, 15 teachers learned about agriculture and how they can integrate this information into their classes. The course included presentations by KSU faculty members, agricultural producers and agribusiness people plus tours, field trips and hands-on experiences.

Topics were as diverse as Insects: Agricultural Partners, Teaching Creatively, Animal By-Products and Economic Issues in Agriculture. The teachers also visited the KSU flour mill, veterinary medicine complex and plant pathology lab plus spent a day following the steps of the beef industry in the Flint Hills.

Each teacher developed a teaching unit on an agricultural topic to be used with his or her own students which will also be reviewed and distributed to other teachers across the state. The Wonderful World of Seeds, Farm Equipment, Ag Legends and Tall Tales, and Folk Songs in Agriculture are just a few examples of their units.

Though a complete two-week course wasn't held in the urban locality, six Kansas City area teachers chose to complete projects on an independent study program. Their topics included An Introduction to Care of Common Domestic Pets, Whether . . . the Weather and Plant Pleasure.

Scholarships totaling \$4,960 from various agricultural organizations made this summer course possible for the teachers.

Ag-Citing Experience at the State Fair

For the third year, KFAC provided a learning experience for children and adults at the Kansas State Fair in September. The Ag-Citing Experience began when fairgoers (primarily but certainly not limited to elementary students) stopped at the Ag in the Classroom booth in the Pride of Kansas building to pick up an activity sheet. These papers, at five different grade levels, guided the students to various agricultural exhibits in the building and across the fairgrounds to answer questions about agriculture. Bright yellow posters in the exhibits explained how many loaves of bread can be baked from the 1988 Kansas wheat harvest, what percent of their income Americans spend on food and why beef is a nutrient dense food, for example.

Completed activity sheets were brought back to the Ag in the Classroom booth where the students were rewarded with prizes donated by ag organizations and businesses.

Nearly 1,500 people completed the activity, and an additional 500 took home the activity sheets. Almost 300 teachers stopped by the Ag in the Classroom booth to learn about resources and register for the drawing of free teaching materials.

The 10 days of the Ag-Citing Experience were possible only with nearly 200 hours of volunteer help from foundation members, Farm Bureau women, 4-H junior leaders and others in addition to the work of a hired helper and the KFAC administrator.

A kit has been developed for a similar Ag-Citing Experience at county fairs.

Adopt a Classroom Program

Farm families may teach children about life on their farms through correspondence with a class. Letters, photos, crop samples and much more can be shared. The students can in turn write letters back to the family, work agricultural math problems suggested by their adopted family or conduct science experiments related to their family's crop or livestock operation. A highlight of the adoption might be a trip to the farm. In the fall of 1988, 39 classes from across Kansas were adopted by farm families.

Resource Library

A library of teaching units, audiovisuals, resource materials, posters and other educational materials provides information to teachers. A phone call or note to the KFAC office can lead a teacher to a variety of resources on various agricultural topics at different grade levels.

Teaching units developed by summer course teachers are being reviewed by another teacher before being typeset for distribution across the state. In a cooperative agreement with Nebraska's Ag in the Classroom program, Kansas and Nebraska will share teaching units.

Computer Software Programs

Farm and Food Bytes, an educational computer software program, was developed for Kansas at the foundation's request in 1985, and a national soil and water conservation version was completed in 1987. These programs use language arts, math, science, social studies and ag games to teach fourth to sixth grade students about agriculture. More than 130 programs have been sold to date through the foundation for classes across the state.

KFAC will distribute a new animal agriculture program in 1989 through cooperation with the Kansas Animal Welfare Task Force.

National Agricultural Literacy Thrust

In October, the National Academy of Sciences released *Understanding Agriculture: New Directions for Education*. This report pointed out that "Beginning in kindergarten and continuing through 12th grade, all students should receive some systematic instruction about agriculture... Agriculture is too important a topic to be taught only to the relatively small percentage of students considering careers in agriculture and pursuing vocational agriculture studies... An agriculturally literate person's understanding of the food and fiber system includes its history and current economic, social and environmental significance to all Americans." Agriculture in the Classroom was noted in the report as a prime example of carrying this out, and the Kansas foundation's 1985 assessment of students' knowledge of agriculture was quoted.

Rep. Pat Roberts joined other Congressmen in pointing out the importance of agricultural literacy Oct. 21, citing KFAC's work. "One of the Kansas foundation's secrets is the volunteerism of farmers, stockmen and agribusinessmen to share their expertise," Roberts said. "Teaching plans for classes ranging from biology to mathematics to history are reviewed by educators to incorporate agriculture into current courses, avoiding the time and resource problems of creating separate curriculums."

Newsletters

The Grab-Ag newsletter is mailed to nearly 3,000 teachers who have been in contact with the KFAC plus every school librarian/media specialist in the state. This publication updates teachers each semester about how they can integrate agriculture into their classes.

The Ag-Citing News newsletter keeps ag organization members, legislators, the media, KFAC donors and others interested in Ag in the Classroom programs up-to-date on KFAC activities.

Foundation Administration

After nearly three years of serving the foundation, Fran Parmley left KFAC in June to move to Colorado. Becky Vining Koch started as KFAC administrator August 1, serving 7/10 time with the foundation and 3/10 time with the KSU College of Education.

KFAC Annual Meeting

Bob Helgesen, head of the KSU entomology department, presented a summer course sampler at the KFAC annual meeting. Using hissing cockroaches, insect collections and activity pages, Helgesen illustrated how he works with summer course teachers to help them share insects with their students. Thirty-four foundation members, donors and guests attended the Nov. 17 meeting in Manhattan.

In-Service Training

Teachers who have taken the summer course conduct in-service training for other teachers to share how to integrate agriculture into their classes.

American Royal

KFAC cooperated with the Missouri Agriculture in the Classroom program to develop an activity similar to the Ag-Citing Experience at the American Royal. KFAC also provided ideas for tours and teacher resources and presented The Giant Cheeseburger demonstration for visitors.

Day on the Farm Kit

A packet of ideas and posters for those who want to plan and host a farm tour is available from KFAC.



KFAC Exhibits and Programs

To reach both educators and ag resource people, in 1988 the foundation hosted exhibits or presented programs at:

- Agriculture Day activities at the capitol
- Kansas-National Educational Association convention
- Kansas Farm Bureau annual meeting
- Rural and Small Schools Conference at KSU
- American Royal
- Kansas State Fair Pride of Kansas Building stage
- Kansas CattleWomen annual meeting
- Kansas WheatHearts annual meeting.

National Ag in the Classroom Activities

In June, Edie Dahlsten of Kansas Farm Bureau Women represented KFAC at the national AITC meeting in Washington, D.C. This gathering provided the sharing of ideas about teaching materials, fund raising, utilizing the media and much more.

In September, KFAC chairman Mardelle Pringle took part in a U.S. Department of Agriculture evaluation of the AITC program in Las Vegas.

Publicity

To inform people about Agriculture in the Classroom, KFAC provided news releases that were distributed across the state by KSU University News. An exclusive story about a Day on the Farm was featured in Grass & Grain. Specific interviews were featured on WIBW radio and television, Topeka; KKSU extension radio, KSU; KRVN radio, Lexington, NE; and KBUF radio, Garden City.

1988 Financial Report

Kansas Foundation for Agriculture in the Classroom

January 1, 1988 - December 31, 1988

Income

Donations	\$16,671.86
Sales of Materials (software, teaching units and curriculum guides)	433.00
Interest	640.60
Reimbursements	731.12
State Matching Grant	<u>28,107.25</u>
Total Income	<u>\$46,583.83</u>

Expenses

Summer Course (scholarships and expenses)	\$6,235.17
State Fair (supplies, travel and hired help)	1,613.53
Curriculum Development and Programs (newsletters, intern, travel and software)	2,718.33
Communications and Office Supplies (computer, phone and postage)	4,185.01
Salaries (administrator, office assistant, student help)	32,814.93
Bank Charges	80.80
Miscellaneous (meeting and chairman's expenses and reimbursements)	<u>2,461.89</u>
Total Expenses	<u>\$50,109.66</u>

Ending Balance \$3,889.96

1988 Donations

Kansas Foundation for Agriculture in the Classroom

\$1,000 or more	Kansas Beef Council Kansas Livestock Association Kansas Farm-City Council Dane Hansen Foundation Kansas Farm Bureau
\$500 - \$999	Kansas Agricultural Aviation Association
\$250 - \$499	Lane County Conservation District Jackson County Conservation District Wyandotte County Farm Bureau Finney County Conservation District Nemaha County Conservation District Cowley County Farm Bureau Kansas Agri-Women Stanton County Farm Bureau Reno County Farm Bureau Riley County Farm Bureau Sedgwick County Farm Bureau Shawnee County Conservation District Wyandotte County Conservation District Kansas WheatHearts Kansas CattleWomen Leavenworth County Farm Bureau Dillons Leavenworth County Farm Bureau Kansas Wheat Growers Research Foundation
\$100 - \$249	Jefferson County Farm Bureau Pottawatomie County Farm Bureau Dickinson County Conservation District Franklin County Farm Bureau Dickinson County Farm Bureau
\$10 - \$99	County Weed Directors Assn. of Kansas Miami County Farm Bureau James and Helen Cubit Richard and Nancy Spiegel American Royal Assn. AgPress Duane Lankard Janis Lee Barbara Moyer Kansas Extension Homemakers Council

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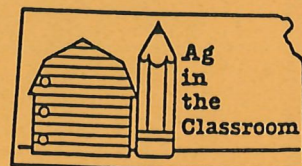
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Send individual students or groups to the chalkboard. Give directions and set a time limit. Enjoy! (These ideas may be used by all students on paper.)

1. Have students draw a farm animal (chicken, pig, cow, ect.) on board. See which student has the most complete drawing in 90 seconds.
2. Draw a farm animal picture without lifting chalk away from board.
3. Draw some foods that are always served in various geometric shapes. Ex: bread/squares, crackers/circles.
4. Have class unscramble agriculture related words. Ex: wheat (wheat).
5. List as many types of farming that a group can think of. Ex: dairy, wheat, beef, hog.
6. Draw three parts of an insect. See who can spell all parts correctly.
7. Have students list some seasonal insects and some all year insects. Ex: fall-locust, all year-cockroaches.
8. Have students list products that have honey used in the product name. Ex: Honeynut Cheerios, Honey Grahams.
9. Draw/list the various shapes cereal comes in. Let students bring in examples.
10. Formulate a list of all the different cereals eaten in the morning. Then try to determine each one's main ingredient.
11. List as many nouns as you can that are farm-related words. Set a time limit.
12. List as many ways to eat turkey as you can in 90 seconds. Ex: franks, lunch meat, roast.
13. Name foods that were served at the first Thanksgiving.
14. List some of the responsibilities of a park ranger.
15. Describe the processes that milk undergoes from cow to table. Also bread from wheat field to table.



16. See who can make the longest list of wheat products in 90 seconds.
Do the same activity with other grains.
17. List all jobs needed in milk and/or bread production.
18. List some products indicative of a particular United States region.
Ex: maple sugar/northeast, oranges/southeast.
19. Explore how agriculture and Christmas relate. Have students list
the various ways.
20. Using the school menu, list all animals and crops used in producing
one lunch.
21. List natural and man-made fibers used in shoes.
22. Diagram students' shoes showing the parts and where each section
originated.
23. Have the class pick a team sport. List the ways an animal product is
used in that particular sport.
24. Look at the Kansas flag. List agricultural/farming related activities
depicted in the seal of Kansas.
25. Name the plants and trees on the school grounds.

*Developed by Elaine Frantz, Oak Grove Elementary, Kansas City, KS.



Congressional Record

(Proceedings and Debates of the 100th Congress
from the Office of Congressman Pat Roberts)

Understanding Agriculture: New Directions for Education

A special order in the House of Representatives
on the growing concerns of agriculture illiteracy by
Messrs. Roberts of Kansas, Stenholm of Texas,
de la Garza of Texas, Marlenee of Montana,
Stangeland of Minnesota and Combest of Texas.

Mr. STENHOLM. Mr. Speaker, we take this time today to discuss a subject that is certainly very near and dear to my heart, and to my colleague, the gentleman from Kansas (Mr. Roberts) and others who will be partici-

pating either in person or with statements which I will interject into the Record at the end.

I would say that the topic of our subject today is the Board on Agriculture of the National Research Council Study entitled "Understanding Agriculture: New Directions For Education."

The preface of that report states:

In the 1980s, many forces have challenged American agriculture and education. These forces include demographics; urbanization; rapid gains in worldwide agricultural production capacity; domestic farm and trade policies; lifestyle changes; global competition in basic and high-technology industries; the explosion in knowledge caused by increasingly sophisticated computers, digital equipment, and biotechnological techniques; specialization within the professions; and public expectations about the role of schools, the food supply, and public institutions. A growing number of educators, farmers, and those in agribusinesses and public institutions recognize the need to adjust policies. Our educational system must meet these challenges.

Mr. Speaker, this new report focuses on the two major elements of agricultural education: agricultural literacy (education about agriculture) and vocational agriculture (education in agriculture).

Moreover, the report correctly points out that in the 1980s, many forces have presented new challenges and opportunities for American agriculture and education. In fact, an extensive array of new biotechnologies and information are becoming available which could revolutionize animal and plant products. Through proper education "in" and "about" agriculture, the successful adoption of these promising technologies can become reality and thereby provide the means for shoring up America's lagging ability to compete in the international marketplace.

The pursuit of public education, at all levels, is a particularly American idea—especially the conviction that educational opportunity must be universally available, and that educational excellence must be consistently sought.

We must recognize that agriculture is too important to be taught only to the small percentage of students considering careers in agriculture and pursuing vocational studies. In fact 4.5 percent of all of our students at the secondary level are pursuing any studies of agriculture at all. All students, regardless of their career goals or whether they are urban, suburban, or rural, should receive some systematic instruction about agriculture. Subsequently, those who are literate about agriculture have some basic knowledge of food and fiber production and what

impact agriculture has on their health.

It seems a very long time ago and then not so long ago that I completed my tenure in the Future Farmers of America and was honored in receiving the coveted American Farmer Degree, the highest degree that you can receive.

Then going on to college, graduating from Texas Tech University with a masters degree in agricultural education and then teaching agriculture for 3½ years.

I am proud to have been involved in a program designed to help prepare high school students for a successful entry into the most dynamic industry in America.

Moreover, the vocational agriculture program that I know has been especially important in establishing a sense of pride, responsibility, citizenship and leadership among its members. Granted, some changes and modifications are needed in bringing about new and revised programs and skills, but the fundamental soundness remains.

Today, no other industry offers a broader, more complex array of challenges than agriculture. It is an open field for those interested in the advancement of science and technology as well as involvement in key domestic and world issues.

Mr. Speaker, the opportunities are great today, not perhaps so much to enter into farming agriculture as a vo-

cation, but let us not forget the 20 percent of all of those who labor and work in the United States in any shape, form or fashion today are in fact involved in agriculture to one degree or another. And as the bumper sticker that makes its way around the farm country so aptly says, "If you eat, you are involved in agriculture." So it is with this in mind that I applaud the NRC Board on Agriculture's willingness and commitment to analyze and submit specific findings, conclusions, and recommendations regarding what agriculture education is and what it should become at the secondary level to maintain and enhance our agricultural industry competitiveness.

Mr. Speaker, with these opening remarks, I am now very happy to yield to my friend and colleague, the gentleman from Kansas (Mr. ROBERTS).

Mr. ROBERTS. Mr. Speaker, I thank the gentleman for yielding, and I want to thank him for taking this special order to discuss a most important topic.

Mr. Speaker, it is most appropriate and important that those of us who serve on the House Agriculture Committee take this time to address a problem that faces not only our farmers and stockmen and agribusiness throughout America but our Nation's consumers as well.

The problem really is a paradox—our farmers and ranchers or what we call the food and fiber industry has been so successful, most citizens know very little in regard to production agriculture and just as important the role agriculture plays in the health and well being of this Nation.

Now, as my friend and colleague from Texas mentioned, the Board on Agriculture of the National Research Council has published its report, Understanding Agriculture: "New Directions for Education." And, Mr. Speaker, the findings of this report accurately identify serious concerns that many of us have been expressing for some time—there are a great many Americans—from young people to senior citizens and I might add more than a few in this Congress—who do not understand the vital role of agriculture in their daily lives.

It is time we begin a strong, coordinated initiative to expand and enhance the agriculture education system. As we move forward in this effort, it is essential that equal attention is focused on education about agriculture and education in agriculture.

Many young people interested in a career in agriculture have been helped toward their goals through elementary and secondary education curriculums such as the Future Farmers of America and youth programs such as 4-H. In addition, land-grant universities and other colleges throughout the country provide more specialized and in-depth education for students who plan to devote their lives to agriculture.

Unfortunately, in an industry that represents 20 percent of the gross na-

tional product, precious little attention has been focused on the 97 percent of the population whose closest association with agriculture is a trip to the grocery store. As a nation, we have diluted the importance of agriculture to our daily existence to the point its viability is no longer considered a priority for the welfare of America.

The Council's report highlights the need for an aggressive education effort to teach our urban neighbors, and more than a few of our rural neighbors, about agriculture. I'm proud to say that one of the recommendations of the report is up and running in Kansas. Four years ago, a concerned group of producer associations, university and State officials formed the Kansas Foundation for Agriculture in the classroom—the first of its kind in the Nation.

Two years ago they completed an agriculture awareness survey of elementary, junior, and high school students. The results, which are cited in the Council's report, indicate less than 30 percent gave correct answers to basic agriculture questions—and this is in a major agriculture State.

Mr. Speaker, one of the questions that was asked was: Do you know what is the leading industry in regard to the Kansas economy?

Only 10 percent knew that it was the livestock industry. And this is in Kansas.

Mr. Speaker, something needs to be done. Today there are several low-cost projects directed in this area.

One of the Kansas Foundation's secrets in its ongoing efforts is the voluntarism of farmers, stockmen, and agribusinessmen to share their expertise. Teaching plans for classes ranging from biology to mathematics to history are reviewed by educators, many retired, to incorporate agriculture into current courses, avoiding the time and resource problems of creating separate curriculums.

For example, biology students can learn the fundamental biological processes of plant germination, animal reproduction, genetics, et cetera, by studying farm production cycles. Abstract mathematics is made clearer by learning how farmers use algebra to calculate seed and fertilizer needs and amortize production costs, or use geometry to measure field size.

Throughout history, students can be made aware of agriculture's role in the shaping many of the world's major economies in times of peace and war.

Today, Kansas is one of many States with cooperative efforts in place to teach young people about agriculture. The USDA is expanding its role as an information resource to share data and successful projects with many areas of the country. These efforts are carrying over into programs within agriculture to better prepare students interested in careers to meet the high technology, economic and environmental challenges of agriculture in the 1990's and beyond.

But the effort to increase agriculture literacy has only begun. Congress

must face its responsibility in this arena, or we risk damaging one of our most precious resources—a reliable, healthy, and low cost supply of food and fiber.

Agriculture is an essential part of this Nation's social and economic structure on a global basis. The Council's report has identified the problem areas. It is up to us to take this information and meet the challenge of spreading agriculture's vital message.

Mr. Speaker, I thank the gentleman for taking this special order.

(Mr. ROBERTS asked and was given permission to revise and extend his remarks.)

Mr. STENHOLM. Mr. Speaker, I thank my friend, the gentleman from Kansas, for participating in this special order.

Mr. Speaker, I would just make a couple of additional comments on why we take this time today and why we believe this report, "Understanding Agriculture: New Directions for Education," is so critical for us today to look and examine. This is not just another study to be talked about once and then to be laid aside.

In the 1920's and 1930's, 30 percent of our population in the United States were in fact farmers. Today it is 2.2 percent. Therefore, it would suggest to even a biased ex-agriculture teacher that changes must occur on the vocational side of training about agriculture, about how to be a better farmer and what that means to us here on a daily basis. The challenges are there,

and they are being met from the standpoint of the Future Farmers of America, an organization whose record speaks for itself. But also let me point out that the polls, if you please, show that they peaked in numbers of members in 1976 and 1977 with 697,500 students enrolled in our schools throughout the United States. That was their peak. Today it has declined, according to the last figures we have, to 525,000.

My point is that in fact there are fewer and fewer students having the opportunity to learn anything about our most basic industry. There are fewer and fewer farmers today, and we may arrive at a time 10 or 20 years from today when those of us who have the privilege of serving in this body cannot say, as so many of us can say today and are able to say today, that we have some roots back to the farm, some roots back to agriculture, some basic understanding of agriculture.

By the very nature of the changing times in the United States, that will make it very difficult in the future for us to do that unless our educational system makes some effort to see to it that in fact more, if not all, of those who study in the school systems of the United States have some opportunity to learn something more about our basic industry.

Mr. Speaker, I see that now the chairman of the Committee on Agriculture, the gentleman from Texas (Mr. DE LA GARZA) has arrived, and I yield to him at this time.

Mr. DE LA GARZA. Mr. Speaker, I thank my distinguished colleague for yielding to me in order that I might join him and my other colleagues in discussing this very important issue of education and a new direction on agriculture.

First, let me say that I think probably the first step we should take is to have people understand what agriculture is and what it is that we do. I think we begin by taking the fact that agriculture and everything in agriculture is the largest consumer group in the United States of America and perhaps in the world, and when we think of the jobs related to agriculture, perhaps 20 percent of all the jobs in the United States in one area or another are related to agriculture.

But the different times and the changes in our society and the direction in which we are going demand that we do more.

I want to commend, for example, the 4-H and the FFA, the Future Farmers of America. We have very close contacts with this group, and that is a nucleus of outstanding young men and woman in the United States of America who have done a tremendous amount of good work.

Recently we had group here working with what they call BOAC, Building Our American Communities. The youngsters have projects that they work on. Perhaps one of the exemplary projects I might mention at this time is to identify the direction we should be going, because some people ask, is there a future in American agriculture? Well, a couple of years ago one of the projects taken on by the youngsters in a small town in Oregon was a reforestation project, and when I asked the young man who was the sponsor of the project in that FFA chapter, "When will you harvest the seedlings that you are now planting?" He said, "Oh, I don't know; 50, 60, 70 years from now."

This exemplifies that chapter and the thinking of that young man, because perhaps FFA and that young man were thinking way, way ahead in the future and had confidence in the future.

But what we speak of here is a multiplicity of things. The schools need to have agriculture as part of the curriculum, not just something off in the back room or in the back of the school yard where you have vocational education or a little meeting room for the FFA or the 4-H. It should be a part of the basic standard curriculum.

Secondly, beginning with adults, we know it is said that there are people out there who think that milk comes out of a carton, that peas come out of a can, and that we just go to a supermarket and ring a little bell and then they bring us whatever cut of meat we would like, chicken or pork or lamb. There are people in our enlightened society like that now. So where do we begin to correct this misconception or inaccuracy or failure in the cultural development of our populace?

We begin in the school, and we begin with the youngsters. We ask, what are

the nutritious foods that we should eat? How do we differentiate a cow from a deer?

A few years back one of my secretaries brought one of our youngsters that I had taken to Texas to visit with me so he could see a few things. I had a mounted deer head in my office, and he looked at it and he said, "Cow?"

That is what his understanding was of anything with horns.

This is the minimal of what we can do.

I commend the gentleman for taking this time and for reminding us of the Research Council's Board report: "Understanding Agriculture, a New Direction of America." This is where we need to go. We need to start with your youngsters in urban and rural neighborhoods, everywhere a youngster is, so he knows for his own good and benefit something about agriculture, so he would know what is the proper nutritional value of the things we eat, and then so he would be able to communicate with his peers in the community. Then that develops to the rest of the community and perhaps to the rest of the Nation, so that we do not lose our link to agriculture and so we know the vocabulary of agriculture and we know where everything comes from.

I do not want to take much more of the time of the gentleman, but there are two basic things about agriculture we should cover: No. 1, the physical body, the machine, not the intellect or the soul, how the good Lord made us in his image and likeness. I am not speaking about that. I am speaking only of the machine. The machine needs only three things for survival, air, water and food. Only the good Lord makes air and water, and only farmers and ranchers make food. That is what it takes for the human physical body to survive.

Then there is the matter of national security. My colleague has listened to me many times on this, and many of my other colleagues have also. But when I was in the Navy, I never got on board a ship. I will cover this very briefly. When I came to Congress, they asked me what they could do for me. I said, "Get me on board a ship."

So I went on a ship, on a carrier, the biggest one I could get. Eventually I asked to get on a submarine. I said, "I want to go on a nuclear-powered submarine." And I did. This is the trinity. We can defend our country on the ground, in the air, and on the water, and also on a submarine, under the water. Our adversaries know where our troops are, they know where our planes are stationed, they know where our missiles are, but they do not know where our submarines are. This is what is protecting the peace and security, not only of this Nation but of the Free World.

When I asked the young commander of that ship how long can you keep this submarine under water, he looked at me and said, "That's a military secret." I said, "Oh, come on, you can tell me." He said, "Well, take a guess."

I am thinking of the core of the re-

actor, the propellant, and I guess 7 years is long, zero is short, and I said 4 years. He said, No, he can keep the submarine under water as long as he has food for his crew. That is the deterrent.

So who is preserving and keeping the peace and security not only of this Nation but of the rest of the free world? The farmers of America, and it is about time that we learn to speak their language.

I thank the gentleman for yielding.

Mr. STENHOLM. Mr. Speaker, I thank the gentleman from Texas, chairman of the Agriculture Committee very much for those pertinent and eloquent remarks that so often, being chairman of the House Agriculture Committee, he is called on to make.

Again, what we have tried to do today is to bring together in a few short words the importance of this particular study, and to show that in fact American agriculture has always been in a state of change, and the concerns of the educational institutions of this country, and the changes this report shows indicate that agriculture will be a part of it.

The FFA is a successful student organization with tremendous leadership and training opportunities for their young people who have the opportunity to participate. The gentleman from Texas, chairman of the committee, mentioned the 4-H program. Again, some 8.5 million young people last year had the opportunity to participate in the 4-H program and in some project in which life usually was a part, and in fact 88 percent of their projects were scientific in nature.

It is this which we must learn to address, to shape and to form into the 1990s and into the year 2000. That is what this study is all about. We commend it to our colleagues for their study and we sincerely thank those who have participated in making the study possible. We have taken this time today to alert a lot of people to the fact of what is happening, what is changing, and what the future of agriculture is going to be, not what it might should be.

Mr. MARLENEE. Mr. Speaker, I am happy to join my colleagues in recognizing the efforts of the board on agriculture of the National Research Council in its recently published study entitled "Understanding Agriculture: New Directions for Education." This study very accurately underscores the vital need to expand our present levels of education not only in agriculture, but also about agriculture. ~~Such expanded efforts do not require a massive new program with huge amounts of new spending. They simply require that we recognize the merits of and the need for better educating all Americans about their agriculture heritage and the challenges facing agricultural producers and marketers.~~ Such recognition, coupled with some redirection of existing resources, would allow us to provide at least a modest amount of agricultural education to elementary and secondary school students. It is unfortunate that at the present time the vast majority of American students go all the way through their formal education with virtually no background about agricultural

courses in many specialized agriculture related subjects. Before this is done, I believe many considerations must be evaluated and reviewed, such as facilities, educators, busing, funding, relation to other school systems, what the impact would be on our technical production and marketing in this country.

Evidence of this education gap is demonstrated frequently in this Chamber when Members debate agricultural issues and programs. I am not finding fault with our colleagues, Mr. Speaker, when Members from suburban and urban areas challenge our attempts to provide modest amounts of financial security and market stability for producers in order that American can maintain the mightiest, most productive agricultural machine in the world. I do, however, feel that if these Members and their constituents had a broader understanding of the realities of agricultural production that they would not be so quick to oppose our attempts to ensure that our farm and ranch producers are able to remain in business in the face of such challenges as natural disasters, unfair and predatory trade tactics employed by world competitors, and general economic uncertainties created by our own Government's incessant tinkering with taxes, regulations, interest rates, and shifts in foreign policy which affect markets.

Again, I am delighted to see this subject of the need for greater agricultural literacy being brought to our attention by the National Research Council, and I would hope that we can focus an even brighter spotlight on the issue during the 101st Congress when we will be writing a new farm bill.

I do note one area in the report which was not discussed, and that is the need for those organizations which represent the interests of agricultural producers to take a very active role in any program of expanded agricultural education in our schools. Many of our national and regional organizations and cooperatives, have a wealth of human resources and agricultural knowledge which can and should be utilized in any such program, and we should provide the framework and the incentives which will take full advantage of these resources. By encouraging such organizations and their members to work in partnership with our educators, we can dramatically improve agricultural literacy in our Nation's schools.

Mr. STANGELAND. Mr. Speaker, today I would like to add my support for, and to call to the attention of my colleagues, the recent report of the board on agriculture of the National Research Council. This report, "Understanding Agriculture: New Directions for Education," focuses on the important role of agricultural education in the secondary schools.

While the board report acknowledges the past successes of some educational programs it stresses the importance and necessity of building on these programs and going beyond them in scope and content. It also stresses that agriculture is too important a topic to be taught only to the relatively small percentage of students considering careers in agriculture and pursuing vocational agriculture studies.

Our farmers make up about 3 percent of our population, yet they produce enough food and fiber to feed our entire Nation. In addition, they successfully export agricultural products to many other countries throughout the world. Our Nation is truly blessed with natural resources and these farmers who are among the most efficient in the world. Furthermore, agriculture programs and policies play a very

important role in many areas of domestic and world affairs.

Yet it appears that the important role of the American farmer and the necessity of sound agricultural policy is not always understood or appreciated uniformly throughout this country. This is why an understanding or what the report calls an "agricultural literacy" is so important. The board defined it as a certain knowledge of food and fiber production, processing, and domestic and international marketing. It also emphasized the importance of being able to make informed personal choices about diet and health.

The board's findings point to two basic challenges: first, agricultural education must become more than vocational agriculture. And second that it is important to look at the present educational system and to improve upon it. Its recommendations are reasonable and workable.

As a farmer and a member of the Agriculture Committee I salute the board on agriculture's report. Furthermore, I will do all that I can to see that the recommendations are carried out, and I urge my colleagues in Congress to join me, and my distinguished colleagues on the Agriculture Committee, in this effort.

Mr. COMBEST. Mr. Speaker I want to first compliment the Research Committee on Agricultural Education in Secondary Schools and the National Academy of Science for their efforts in putting together the book "Understanding Agriculture—New Directions for Education." I also want to congratulate the many people who participated in the accumulation of material that went into the publication.

In reviewing the book, there is a heavy focus on agriculture education as a whole, and I believe many of the recommendations in the book could provide for better teaching not only in vocational education, but in many other areas. Although the publication makes many recommendations about where we should be in vocational agriculture education, I believe it is now important that we provide a plan to reach some of these goals.

Every one of us, as public officials, has been given a challenge by the authors to provide leadership in the initiation of agricultural literacy efforts and the reformation of vocational agriculture. It is our duty to take this challenge, look at the recommendations, and move forward in helping provide the best education for the youth of America.

Being one who had the opportunity to experience first hand the vocational education system, much of which was provided while I was a member of the Future Farmers of American [FFA], I continue to have a great interest in this important part of our secondary school system.

One recommendation made in the book is that beginning in kindergarten and continuing through 12th grade, all students should receive some systematic instruction about agriculture. I would hope that this is one endeavor that might be accomplished. This is important because we all must remember that if you eat, you are involved in agriculture.

I also found very interesting the recommendation that the establishment of specialized magnet schools for the agricultural sciences in major urban and suburban areas should be encouraged. In addition to teaching a full range of academic courses, my understanding is that these magnet schools would add

colleges, and what will the interest level be in our urban areas. Although this may be a viable idea, I believe this suggestion should come under much more review.

The book also makes many other recommendations, such as high-tech instructional materials, extravagant laboratories and other facilities, which brings up the question of where the money is going to come from for these expenses. Now I am not criticizing, but merely making the point that many of our schools would love to do this, but are just not provided the financial base to accomplish such goals.

Another recommendation made by the committee, is that the "FFA should change its name and revise its symbols, rituals, contests, awards, and requirements for membership . . .". However, I am not sure that the authors would have specifically addressed this issue had they not been at a national FFA convention in which this was heavily discussed. As a former member of this great organization, I have mixed emotions about such recommendations.

However, I am sure that the FFA will address this matter with open-minds and will reach a decision which is best for the Future Farmers of America.

Since 1928 the FFA has been providing an opportunity for many high-school students to broaden their skills and knowledge in not only agriculture, but leadership, public speaking, science and a wide variety of other activities. I commend the FFA for their past activities and accomplishments, but encourage them to move forward in this new era of agriculture.

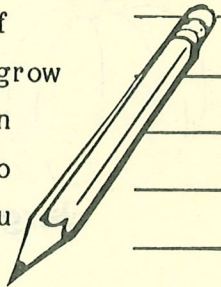
I appreciate the gentleman holding this special order so that we can openly discuss the recommendations made by this publication. Although the authors may have gone beyond the originally scope of looking at vocational agriculture education in secondary schools, I do believe we have been presented with a valuable study and a challenge to help our vocational education system move into the future.

AG-CITING ACTIVITIES FOR PRE-SCHOOL AND KINDERGARTEN STUDENTS

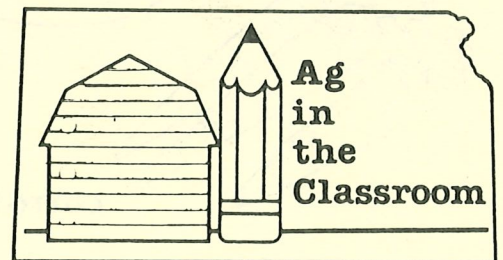


Welcome to the Kansas State Fair! Your visit to the Fair is a good time to learn about Kansas farms that produce the food you eat. You are likely visiting the fair with Mom or Dad, a teacher or someone who can help you read the activity questions and learn about lots of things. The farms in our state grow many things which you will see on display. You can see animals who live on farms. They can help you learn more about Kansas farms.

Finding the answers to the questions on these pages is a fun way to learn about farms and where food comes from. When you have answered each question return these activity pages to the Ag in the Classroom exhibit in the Pride of Kansas Building for a reward. The Ag in the Classroom exhibit is in the southwest corner of the Pride Building next to the Honey Show. Are you ready for an AG-CITING EXPERIENCE? Let's go!



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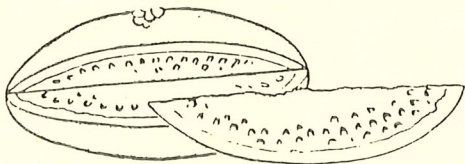


THE KANSAS FOUNDATION FOR AGRICULTURE IN THE CLASSROOM

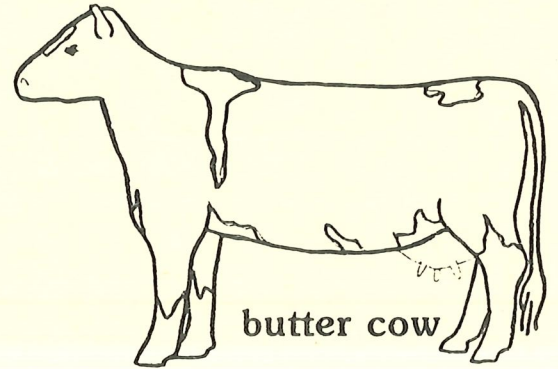
There are lots of fun things to see and learn

In the PRIDE OF KANSAS BUILDING

Circle these things as you see them in the PRIDE OF KANSAS BUILDING



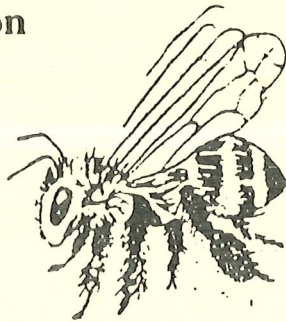
largest watermelon



butter cow



largest pumpkin

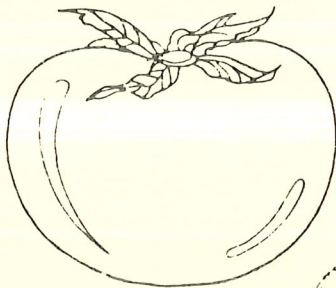


honeybees

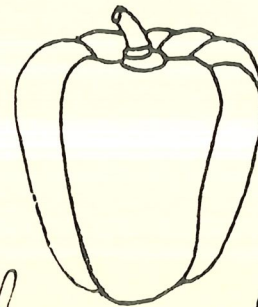
MANY FRUITS AND VEGETABLES GROW IN KANSAS .

CIRCLE THE ONES THAT GROW ABOVE THE GROUND

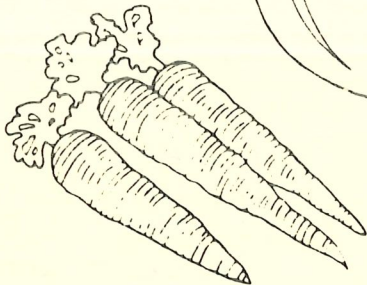
X THE ONES THAT GROW UNDERGROUND.



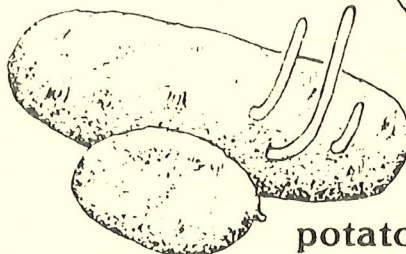
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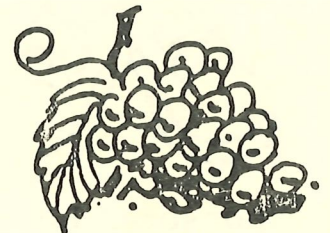
green peppers



carrots



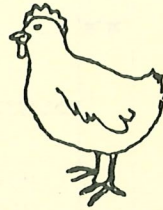
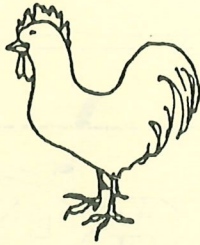
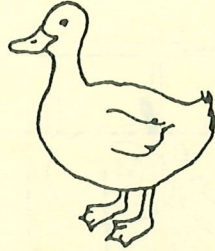
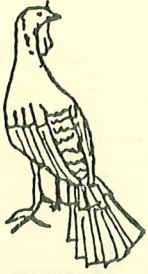
potatoes



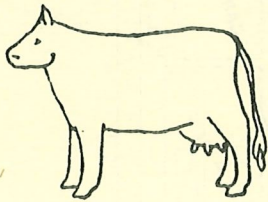
grapes

In the KIDDIES BARNYARD

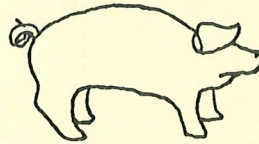
CIRCLE THE FOOD THESE ANIMALS EAT



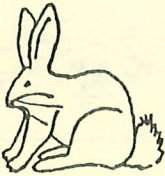
oats
peanuts
cracked corn



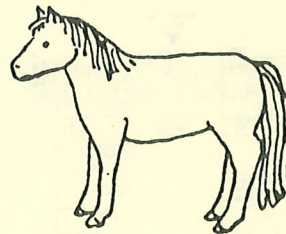
alfalfa hay
silage
grasses



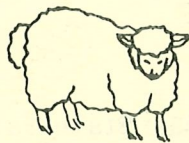
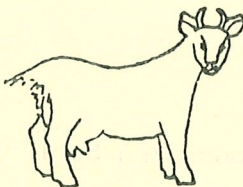
popcorn
hotdogs
cracked corn



alfalfa pellets
popcorn
potatoes



carrots
oats
alfalfa hay

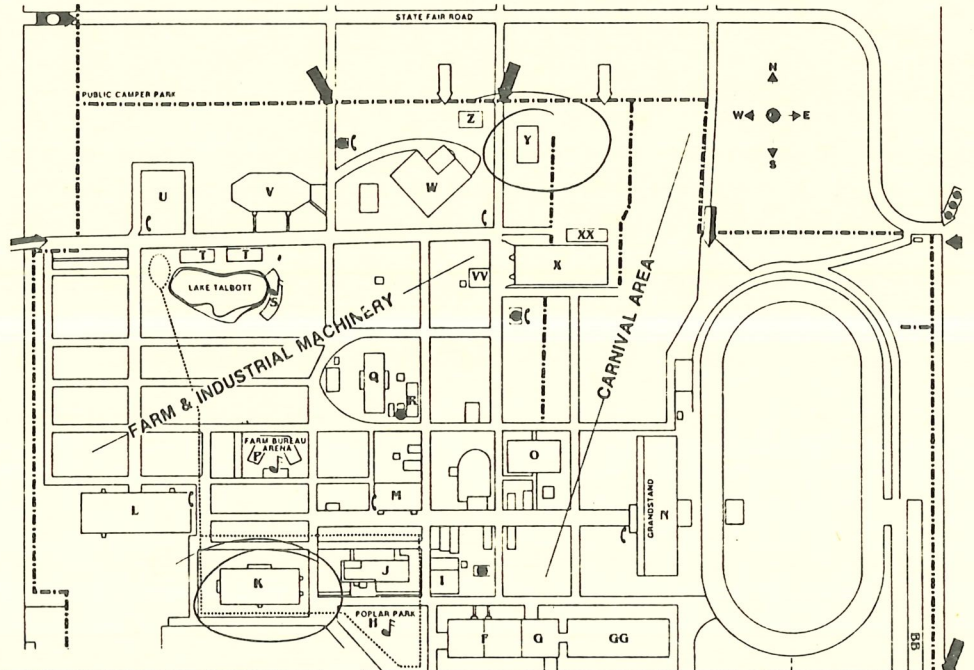


oats
alfalfa hay
grasses
sweet corn

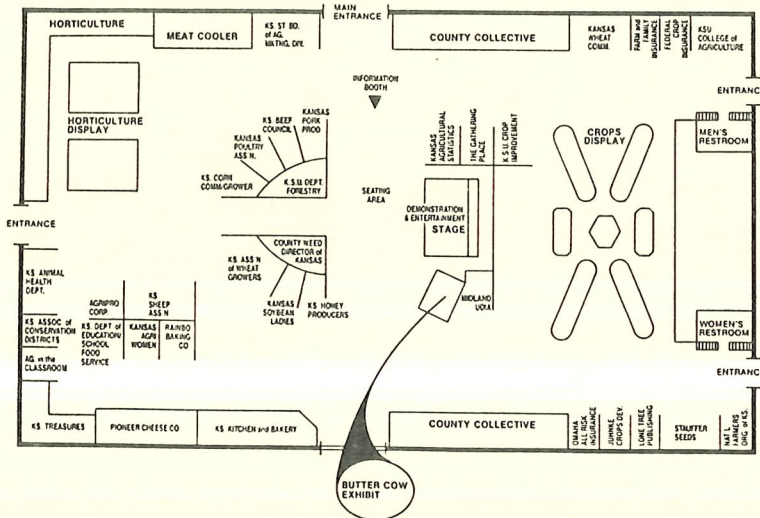
Guide TO THE FAIRGROUNDS

K - PRIDE OF KANSAS BUILDING

Y - KIDDIES BARNYARD



Pride of Kansas Building



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AG-CITING ACTIVITIES FOR FIRST AND SECOND GRADE STUDENTS

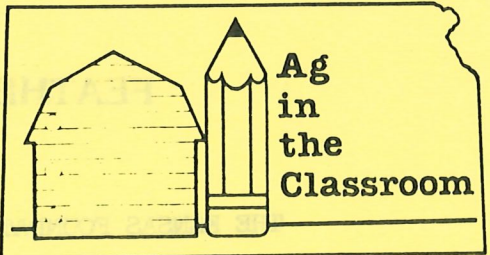
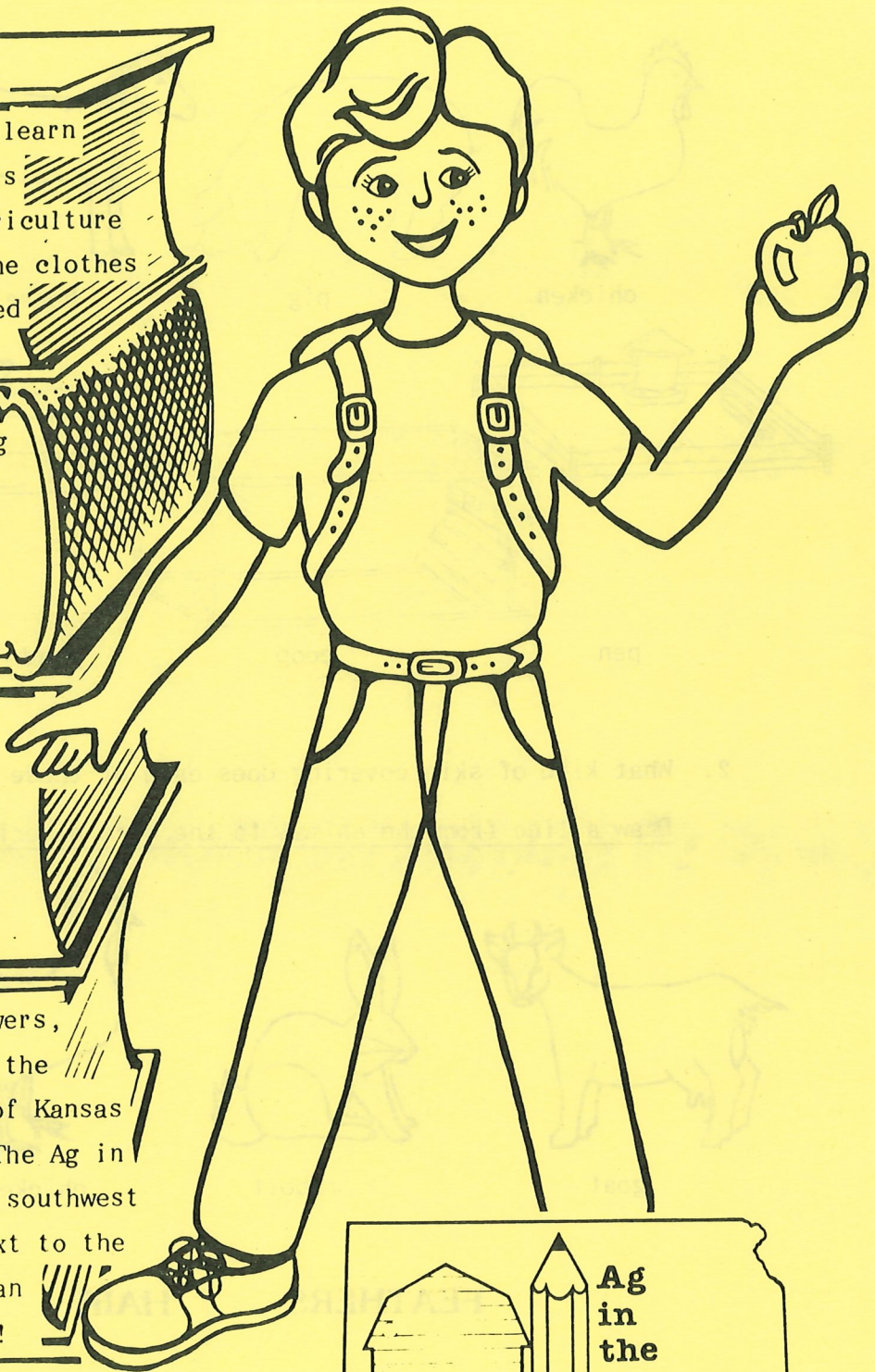
Welcome to the Kansas State Fair!

The State Fair is a fun place to learn about agriculture. Agriculture is important to Kansas and you! Agriculture gives you the food you eat and the clothes you wear. Agriculture also helped build the house you live in!

Kansas farms grow many crops and raise many animals. Learning about these crops and animals is easy and fun! These activity pages contain questions about Kansas agriculture.

Can you answer them? Follow the map to find exhibits where you will learn the answers. The answers are written on posters

at the exhibits. When you have found all the answers, return these pages to the Ag in the Classroom exhibit in the Pride of Kansas Building to receive a reward! The Ag in the Classroom exhibit is in the southwest corner of the Pride Building next to the Honey Show. Are you ready for an Ag-Citing Experience? Let's go!



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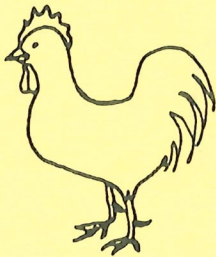
THE KANSAS FOUNDATION FOR AGRICULTURE IN THE CLASSROOM

In the KIDDIES BARNYARD

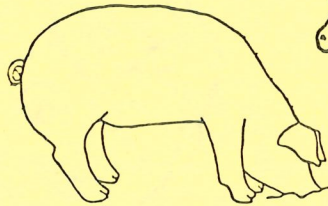
Visit the animals in the KIDDIES BARNYARD to find the answers to these questions

1. Animals live in different kinds of homes.

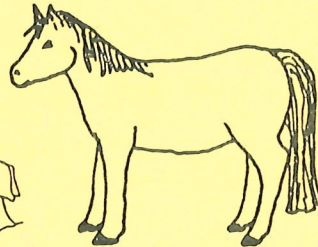
Draw a line from the animal to the home it lives in.



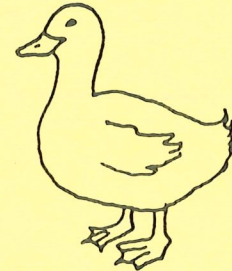
chicken



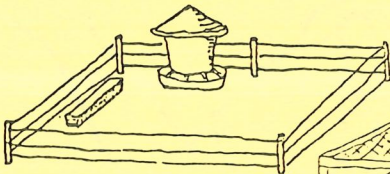
pig



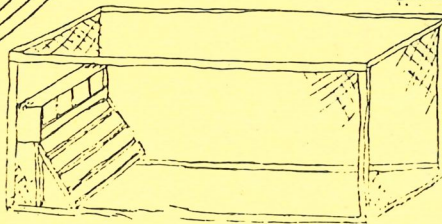
horse



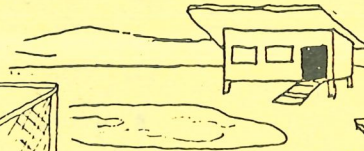
duck



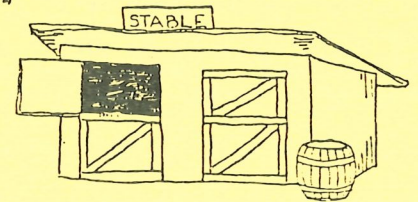
pen



coop



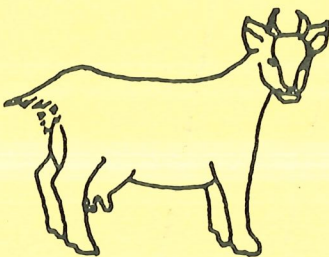
pond



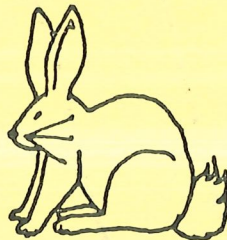
stable

2. What kind of skin covering does each of these animals have?

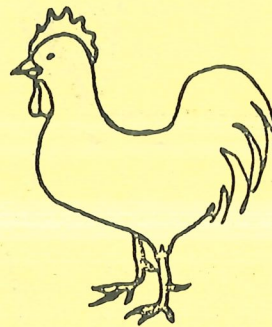
Draw a line from the animal to the word describing its skin covering.



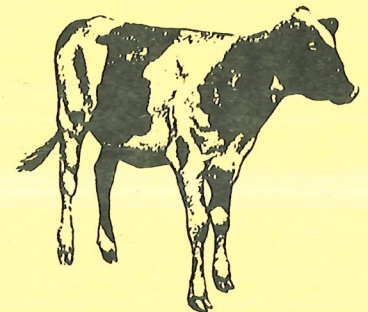
goat



rabbit



chicken



calf

FEATHERS

HAIR

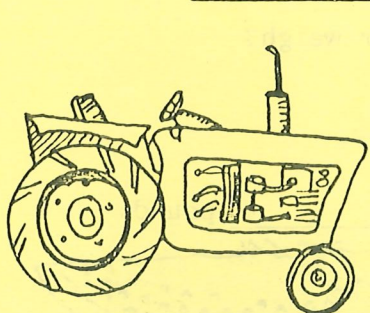
FUR

In the PRIDE OF KANSAS BUILDING

Visit the PRIDE OF KANSAS BUILDING to find the answers to these questions.

3. Kansas farmers grow many kinds of grain. Kansas is the Wheat State.

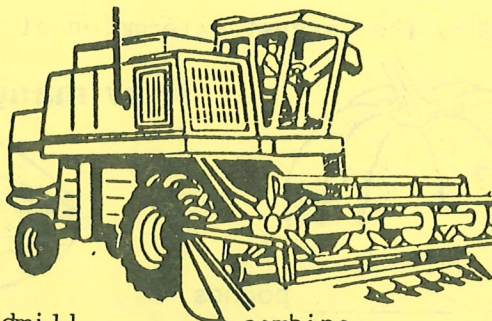
Circle the picture of the machine used to harvest grain.



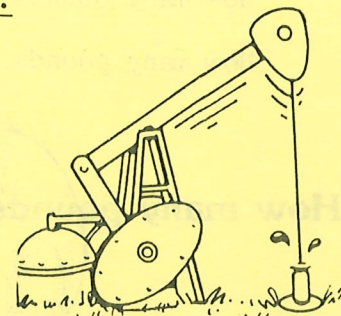
tractor



windmill

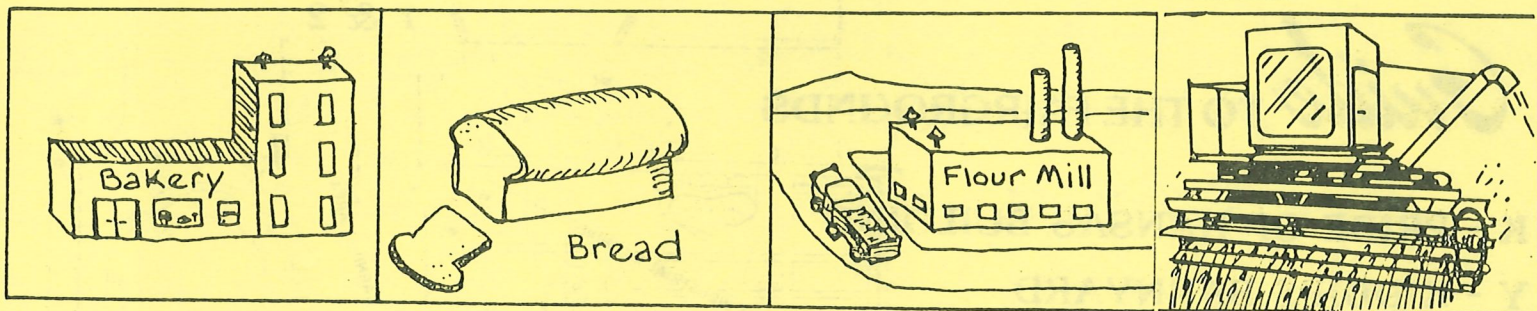


combine



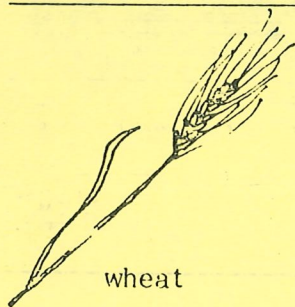
oil well

4. Wheat stops at many places in its journey from a Kansas farm to your dinner table. These are the stops. Number the pictures in order.

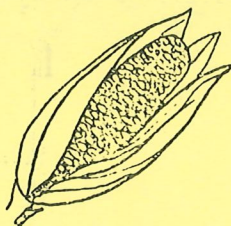


5. The grains grown in Kansas are used to make many foods.

Draw a line from the grain to the foods made from that grain.



wheat



corn



soybeans



oats



oatmeal



corn oil



margarine



flour



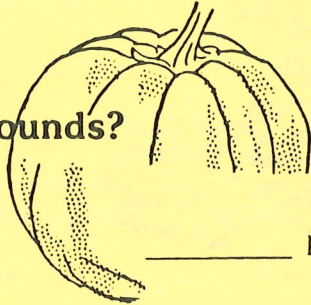
spaghetti

6. Vegetables and fruits like pumpkins and watermelons are grown on Kansas farms.

How many pounds does the largest pumpkin at the State Fair weigh?

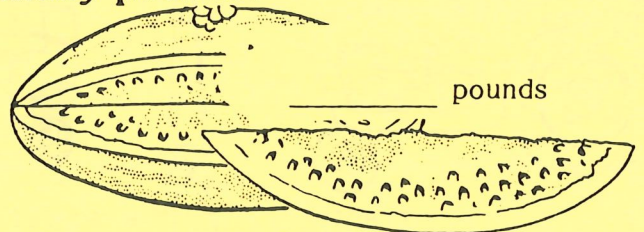
How many pounds does the largest watermelon at the State Fair weigh?

How many pounds?



_____ pounds

How many pounds?

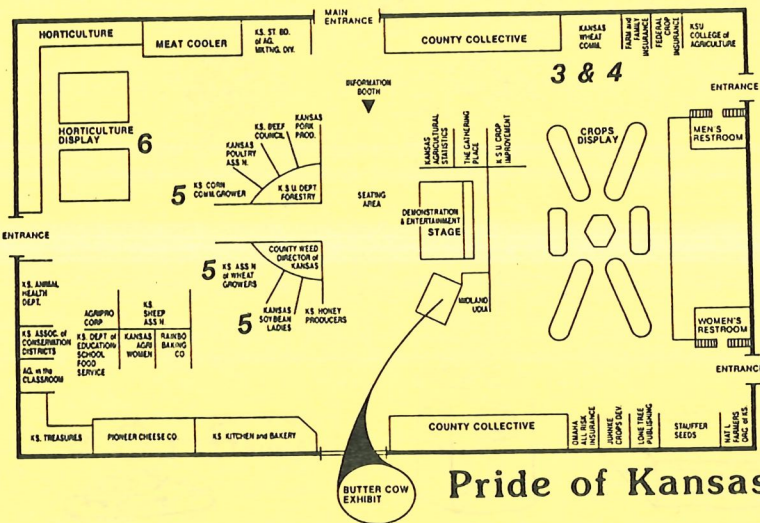
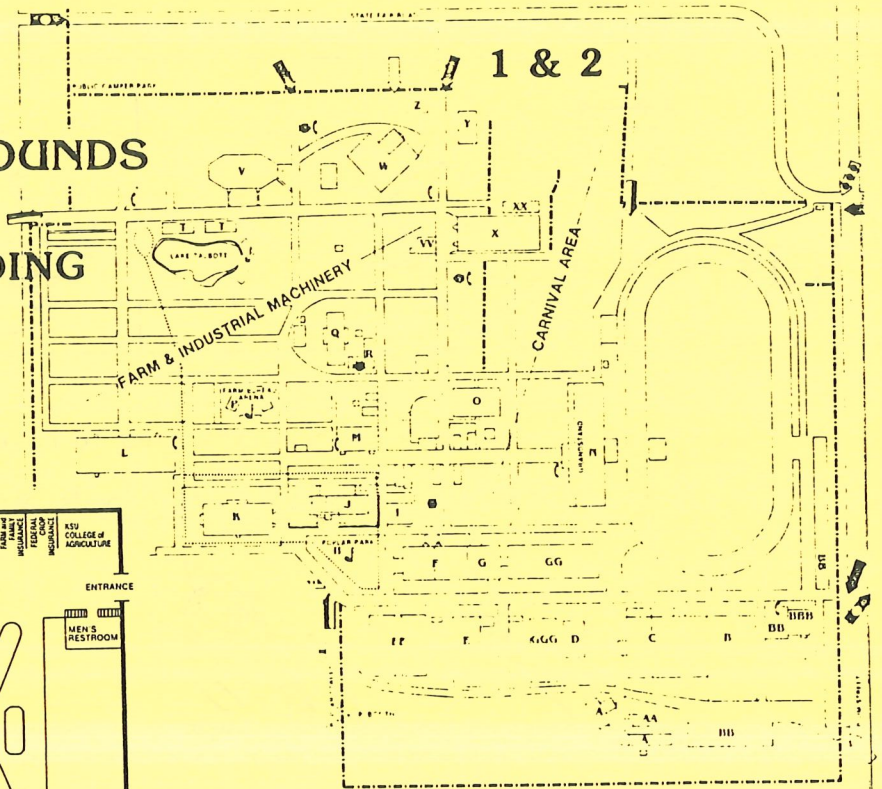


_____ pounds

Which weighs more you or the pumpkin? _____

Guide TO THE FAIRGROUNDS

K - PRIDE OF KANSAS BUILDING
Y - KIDDIES BARNYARD

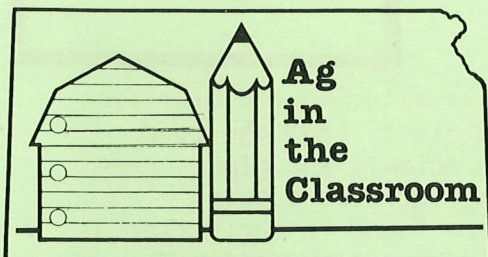


Pride of Kansas Building

The "AG-CITING EXPERIENCE" at the 1987 Kansas State Fair is sponsored by THE KANSAS FOUNDATION FOR AGRICULTURE IN THE CLASSROOM

For further information about AG IN THE CLASSROOM write:
Kansas Foundation for Agriculture in the Classroom
Bluemont Hall, KSU, Manhattan, Kansas 66506 913-532-7946

AG-CITING ACTIVITIES FOR THIRD AND FOURTH GRADE STUDENTS



Welcome to the Kansas State Fair! There are many things to see and do at the State Fair. For one thing you can learn lots about Kansas agriculture. Agriculture is the most important industry in our state. We depend on agriculture to provide us with food, clothing, and shelter. These activity questions will give you clues to some important Kansas ag facts. You'll be able to find the answers at the different exhibits on the fairgrounds. The map will tell you where to find the answers. The exhibits marked with a number will have posters to help you find the answers to the questions. When you have answered each question return these pages to the Ag in the Classroom exhibit in the Pride of Kansas Building for a reward. The Ag in the Classroom exhibit is in the southwest corner of the Pride Building next to the Honey Show. Now get ready for an AG-CITING EXPERIENCE!

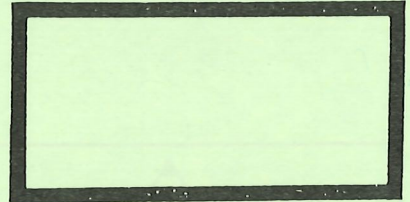
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There are lots of fun things to see and learn

- 1. Brands such as XIT are a return address for cattle. They are used to help identify herds of cattle. Stop by the Kansas Animal Health Department exhibit to learn more about cattle brands in Kansas.

DRAW YOUR FAVORITE BRAND HERE.



How many cattle brands are registered in Kansas?

ANSWER: _____ brands



- 2. Boys and girls need nutrients like vitamins and minerals to live and grow. We get our nutrients from the food grown by farmers for us to eat. Animals and plants need nutrients too. Farmers use fertilizers to supply nutrients to plants. One nutrient found in fertilizer also begins with the letter "n". Visit the BioCorp Global exhibit to learn more about fertilizer.

Name the nutrient needed by plants beginning with "n".

ANSWER: N _____

- 3. Lambs are sheep which are less than one year old. Lambs bodies are covered with wool to keep them warm during the cold winter months in Kansas. Farmers shear their sheep and sell the wool fabric for making warm clothing for you to wear. See sheeps' wool at the Kansas Sheep Association exhibit and learn the answers to these questions.

How often are sheep sheared?

How much wool is sheared from one lamb?

ANSWER: _____

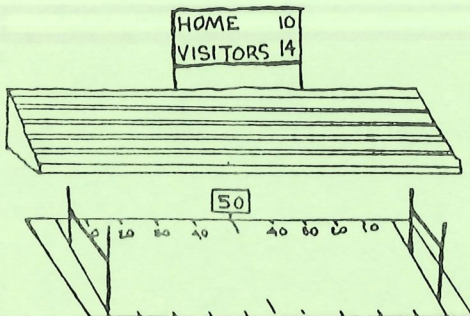
ANSWER: _____

- 4. Some Kansas farmers grow vegetables such as carrots, green beans, and pumpkins. How much does the largest pumpkin displayed at the 1986 Kansas State Fair weigh? How many pumpkin pies would this pumpkin make?

ANSWER: _____ pounds

ANSWER: _____ pies

Which weighs more the pumpkin or you? _____

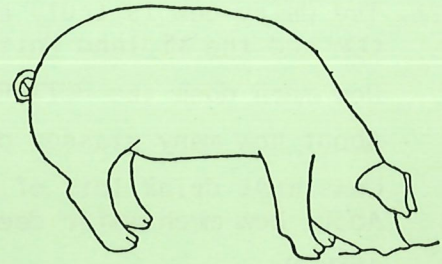


- 5. An acre is a piece of land about the size of a football field. Kansas farms are measured in acres. Kansas Agricultural Statistics, formerly the Kansas Crop and Livestock Reporting Service can tell you how much total land area in acres there is in Kansas and how many acres are farmland.

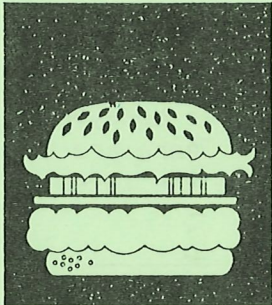
ANSWER: acres in Kansas _____

ANSWER: acres farmland _____

6. Meat from pigs is called pork. Pigs give us bacon, ham, ground pork, and pork chops. Stop at the **Kansas Pork Producers** exhibit to ask questions you may have about pigs. Be sure to find out about how many pounds a pig weighs when it is sent to market.



ANSWER: _____ pounds



7. No one knows for sure when or how the first candle was made. It is known that the ancient Egyptians used candles made of a reed dipped in tallow. Tallow is a wax obtained from melted beef _____. Find this answer at the **Kansas Beef Council** exhibit.

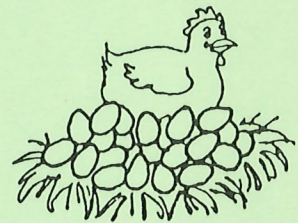
8. Chickens give us eggs. Chickens are one type of poultry. Visit the **Kansas Poultry Association** exhibit to learn these answers.

About how many eggs does one chicken lay in one year?

ANSWER: _____

Then how many one dozen egg cartons can one chicken fill in one year?

ANSWER: _____



9. Kansas grows more wheat than any other state in the United States. Visit the **Kansas Association of Wheat Growers** exhibit to learn the answers to these questions.

What season of the year is Kansas wheat harvested? ANSWER: _____

How many bushels of wheat were harvested in Kansas this year? ANSWER: _____

How many loaves of bread can be made from the flour made from one bushel of wheat?

ANSWER: _____ loaves



10. Soybeans are the third largest crop grown in the United States. You can see samples of soybeans at the **Kansas Soybean Ladies** exhibit.

Name four food products made from soybeans.

ANSWER: 1. _____ 2. _____ 3. _____ 4. _____

11. The dairy cow is truly an amazing milk machine. Be sure to see the BUTTER COW and the Midland United Dairy Industry Association exhibit.

How much does the BUTTER COW weigh? ANSWER: _____

About how many glasses of milk does a cow produce each day? ANSWER: _____

Cows must drink lots of water to produce milk.

About how much water does a dairy cow drink each day to produce milk?

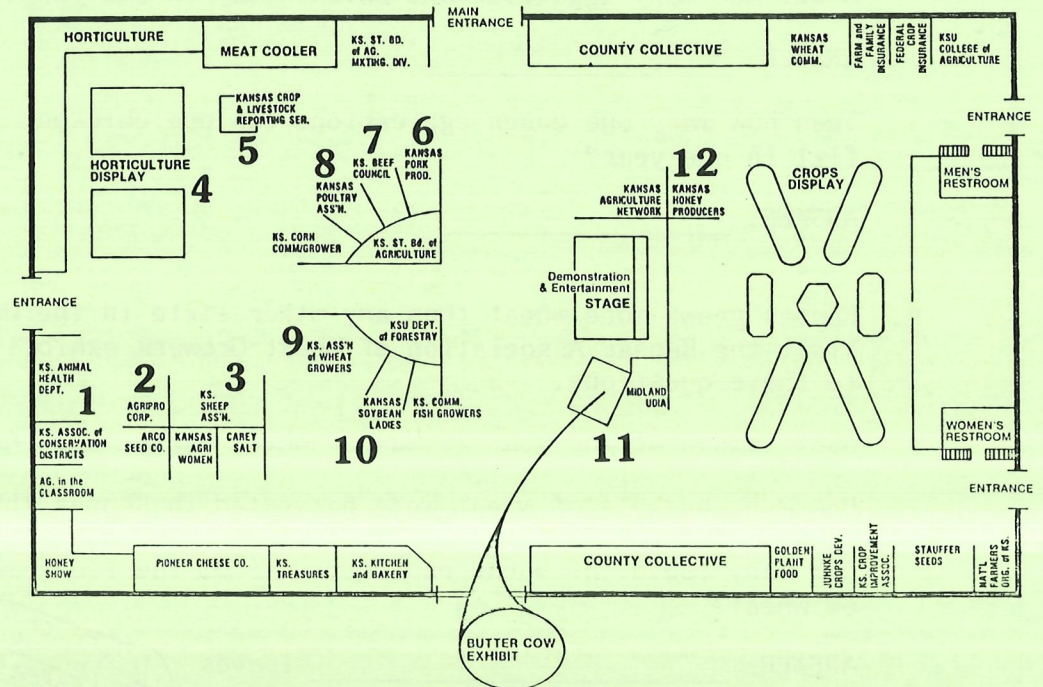
ANSWER: _____

Visit the Dairy Barn on the fairgrounds to see the different breeds of dairy cattle and to see cows being milked.

12. Honeybees work hard to fill their hives with honey. You can see honeybees at work in their hive at the Kansas Honey Producers exhibit. There are three types of honeybees that live in each hive. Can you name the three types?

ANSWER: 1. _____ 2. _____ 3. _____

GUIDE TO The Pride of Kansas Building



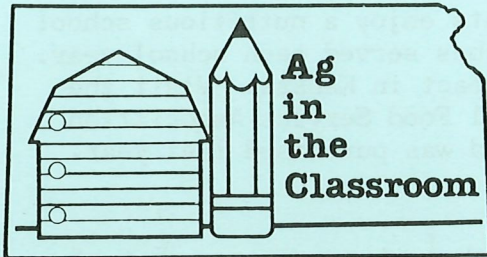
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Blumont Hall, KSU, Manhattan, Kansas 66506 913-532-7946

AG-CITING ACTIVITIES FOR FIFTH AND SIXTH GRADE STUDENTS



Welcome to the Kansas State Fair! The State Fair is a good opportunity to learn about agriculture. If you have wondered why agriculture is the highlight of the State Fair, it's because agriculture is so important to Kansas. Let's see how many ag facts you can learn. Follow the map to find the answers to the questions on these pages. The map indicates the designated exhibits where you will find clues to the answers written on posters. Don't forget to return your completed activity pages to the Ag in the Classroom exhibit in the Pride of Kansas Building for a reward. The Ag in the Classroom exhibit is in the southwest corner of the Pride Building next to the Honey Show. Start now for an AG-CITING EXPERIENCE!

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FIND THE ANSWERS TO THESE QUESTIONS? CHECK MAP ON BACK PAGE TO FIND EXHIBITS.

1. Farmers build _____ for soil conservation. Visit the **Kansas Association of Conservation Districts** exhibit to learn the answer and more about soil conservation. Find out how many years it takes to make an inch of top soil - which is the reason soil conservation is so important.

ANSWER: It takes _____ years to form an inch of topsoil.

2. A return address for cattle is a _____. The **Kansas Animal Health Department** has the answer for this one.

3. Every school day over 274,000 Kansas students enjoy a nutritious school lunch. That is over 48 MILLION school lunches served each school year. School Food Service has a great economic impact in Kansas. Visit the **Kansas Department of Education/Kansas School Food Service Association Exhibit** to find out how many dollars of food was purchased last year.

4. What mineral is so important to a baby pig that it receives a shot of it shortly after birth? ANSWER: _____. This is one of the questions the **Kansas Agri-Women** are asking fair visitors. Visit their exhibit to meet the challenge of their quiz board.

5. **Rainbo Baking Company** of Hutchinson, Kansas uses an average of _____ pounds of Kansas flour to make its products each year. Find the answer to this question and others you may have about bread products at the **Rainbo Baking Company** exhibit.

6. Wool is a good fiber for making clothing because it will keep you warm and will not _____. Visit the **Kansas Sheep Association** exhibit to fill this blank, learn why this answer is true, and more about sheep and wool.

7. "FROM THE LAND OF KANSAS" is a _____ program used to promote Kansas agricultural products. The **Marketing Division** of the **Kansas State Board of Agriculture** helps farmers and Kansas companies sell the products they produce. The **Marketing Division** can tell you about products "FROM THE LAND OF KANSAS". See product samples at their exhibit.

8. Pork is the leading source of which B-Vitamin? ANSWER: _____. Pork contains three times more of this vitamin than any other food. This vitamin is important to your body's nervous system. Learn the answer to this question and more about pork at the **Kansas Pork Producers** exhibit.

9. Beef is a nutrient dense food. Learn the definition of the term nutrient dense from the **Kansas Beef Council** then fill in the blank in this sentence. Beef is a nutrient dense food because it contains a high proportion of nutrients to _____.

10. There are five sizes of eggs.
In other words, chickens lay eggs in five different sizes.
The largest chicken eggs are called _____.
Who can tell you about chickens and eggs?
The **Kansas Poultry Association** of course.
By the way which came first the chicken or the egg?

11. Wheat, soybeans and corn are very important grain crops grown in Kansas. Visit the exhibits of the experts on these grains the **Kansas Corn Commission and Corn Growers, Kansas Association of Wheat Growers, and Kansas Soybean Ladies** to check for the answers to these questions.

What season of the year is - corn planted? _____ harvested? _____

What season of the year is - wheat planted? _____ harvested? _____

What season of the year are - soybeans planted? _____ harvested? _____

12. A beehive is called an _____.
A beekeeper is called an _____.
What two products do bees produce. ANSWER: _____ and _____
Visit the **Kansas Honey Producers** exhibit to learn about these two products and see a live colony of bees.

13. Weeds can significantly reduce crop yields. For this reason county weed directors have an important job working with property owners in the state of Kansas to reduce noxious weed infestations. Visit the exhibit sponsored by the **County Weed Directors of Kansas** to find the answers to these questions.

Research has shown that a severe bindweed infestation can reduce a wheat crop yield by _____ percent and a grain sorghum crop yield by _____ percent

14. If you were asked the question "Does Kansas have any forests?". What would your answer be? ANSWER: _____
A forest is defined as: a dense growth of trees and underbrush covering a large tract. Did you know that every year the forests in Kansas grow 80 million board feet of wood? The **Kansas State University Department of Forestry** can tell you what a board foot is and how many average size homes 80 million board feet of lumber would build. ANSWER: _____

15. Breads and other wheat foods are important sources of two of the three primary nutrients. Learn the answers at the **Kansas Wheat Commission** exhibit.

ANSWERS: protein and _____

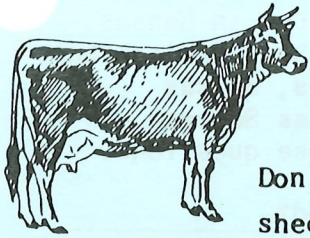
16. At least four things are necessary to raise a crop in Kansas. Can you name them?

1. _____ 2. _____
3. _____ 4. _____

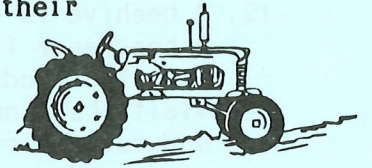
If you need help find the answers at the **Kansas Crop Improvement** exhibit.

17. If the Butter Cow could talk she'd have lots of stories to tell. She'd tell you that milk is _____ to kill harmful germs. And that milk is _____ to break up fat particles and spread them evenly in the fluid. Her friends at the **Midland United Dairy Industry Association** exhibit are speaking for her during the fair. Check there for these and other answers about milk and all the dairy products.

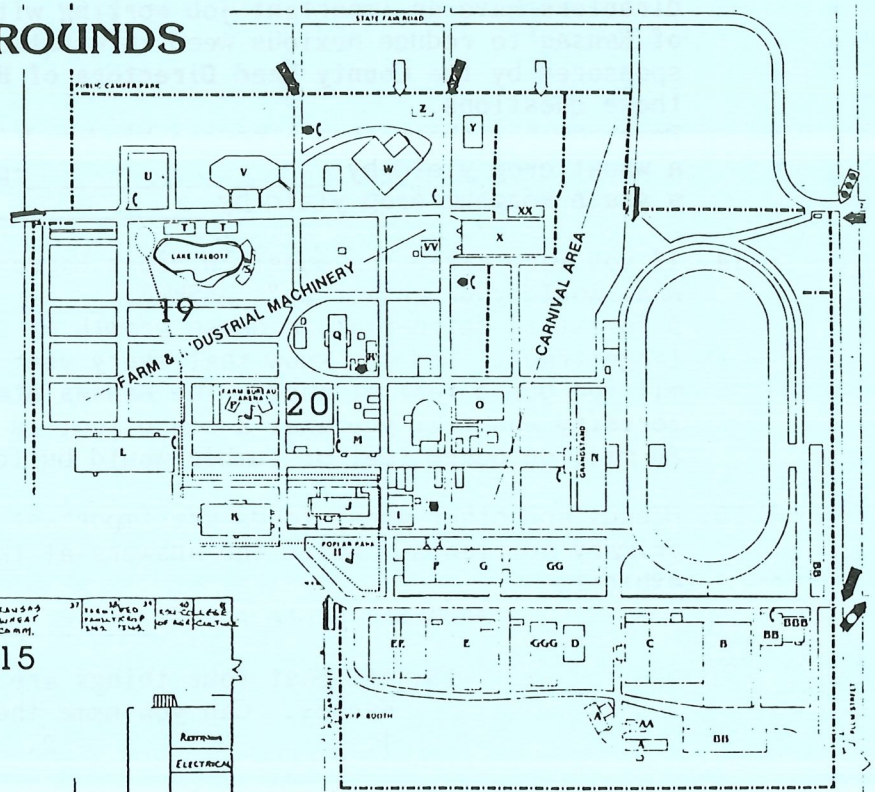
18. _____ is a very nutritious snack that is grown in Kansas and sometimes used as a Christmas ornament. Learn the answer at the **Kansas Treasures** exhibit. It's on the way as you return your completed activity sheet to the Kansas Foundation for Agriculture in the Classroom exhibit to receive your reward.



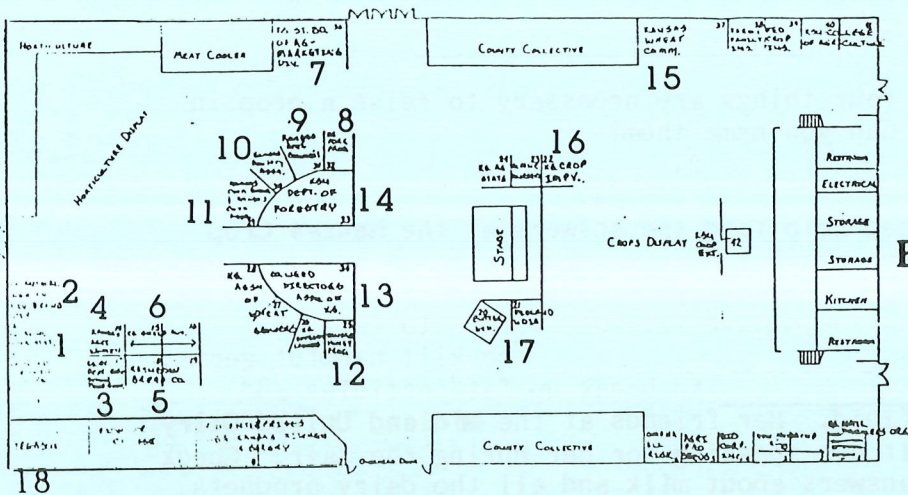
Don't miss seeing the various breeds of cattle, swine, sheep, horses, rabbits and poultry in the livestock barns on the south side of the fairgrounds. Walking through the machinery exhibits provides an interesting view of the equipment used by Kansas farmers in their business of producing food and fiber.



Guide TO THE FAIRGROUNDS



K - PRIDE OF KANSAS BUILDING



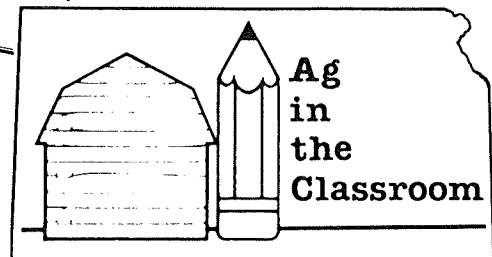
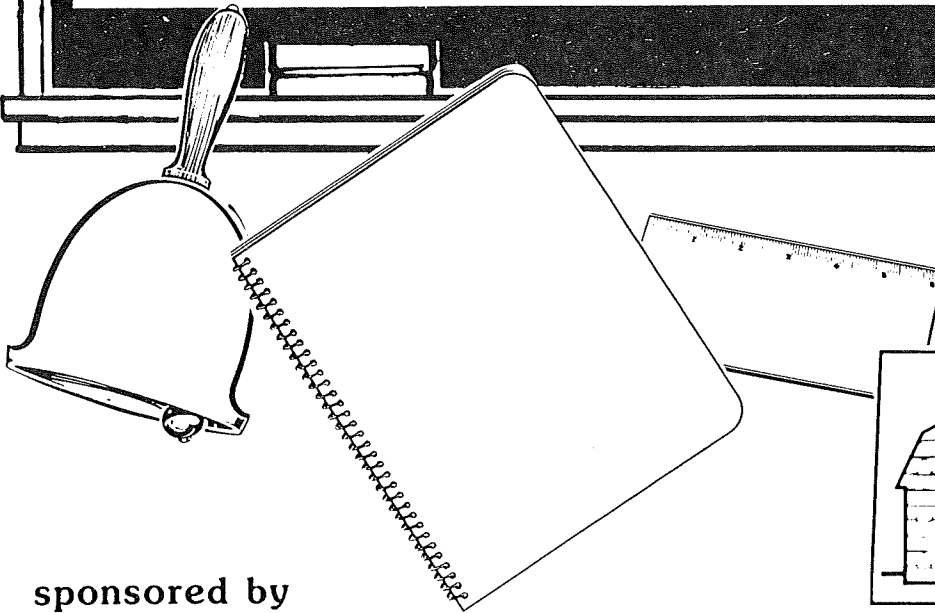
BUILDINGS B - G ARE LIVESTOCK BARNES

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 Bluemont Hall, KSU, Manhattan, Kansas 66506 913-532-7946

WHAT'S YOUR AGRICULTURAL I. Q.?

Welcome to the Kansas State Fair. Would you consider yourself knowledgeable about about our state's largest industry? Test your understanding of Kansas agriculture by completing this Ag I.Q. questionnaire. Follow the map to find the designated areas where the answers can be found. The answers are located on posters displayed at the exhibits in those areas. Each exhibitor has something special on display for you to see, so be prepared for an "AG-CITING EXPERIENCE"! You'll discover that becoming informed about the industry that you rely on each day, to provide the food you eat and the fibers you wear, is interesting and easier than you thought! Don't forget to bring your completed questionnaire back to the Ag in the Classroom exhibit in the Pride of Kansas Building to receive a reward! The Ag in the Classroom exhibit in is the southwest corner of the Pride Building next to the Honey Show.



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1. How many years does it take to make one inch of topsoil? _____
 How many tons of Kansas topsoil is lost each year due to erosion? _____
 Knowing these two facts, it's easy to understand why soil conservation is so important. Learn more about soil conservation from the **Kansas Association of Conservation Districts** at their exhibit in the Pride of Kansas Building.

2. Both Kansas farmers and families living in Kansas cities and towns use fertilizer to raise field crops or gardens and lawns. The letters "NPK" are a key to selecting fertilizer. What do these letters represent on a bag of fertilizer? _____
 BioCorp Global specializes in fertilizer.
 Check your answer at their exhibit.

3. Some vegetables which are commonly called pumpkins are actually _____
 Stop at the **Horticulture Display** to see the wide variety of vegetables and fruits grown in Kansas and learn how to identify a real pumpkin. What is the one characteristic of a genuine pumpkin that distinguishes it from other large, orange vegetables we call pumpkins? _____

4. The **Marketing Division of the Kansas State Board of Agriculture** helps to market products "From the Land of Kansas". Did you know that "From the Land of Kansas" is a trademark which is used to identify products produced or processed in our state. The Marketing Division can help you answer this question. What term is used to describe foods and beverages that result from the processing of farm commodities and other raw products? _____

5. Pork is the leading source of which B-vitamin? _____
 Pork contains three times more of this vitamin than any other food. That's just one of many good reasons for eating pork. This vitamin is important to your body's nervous system. Check for this answer and learn more about pork at the **Kansas Pork Producers** exhibit.

6. Beef provides iron, B vitamins and protein. Builds and repairs tissue. Helps build blood and form _____ to fight _____.
 Check for these answers and other facts about beef from the **Kansas Beef Council**.

7. Eggs really are incredible and versatile. They are one of the foods that are produced right in their own package. The **Kansas Poultry Association** is a walking "eggyclopedia" of facts about eggs. The KPA can tell you: How many eggs does one chicken lay each day? _____
 About how many eggs does one chicken lay in one year? _____
 Then how many one dozen egg cartons can one chicken fill in one year? _____

8. If you had planted an acre of corn 100 years ago you could expect to harvest 28 bushels of corn from that acre. If you had planted an acre of corn this spring, as an average, how many bushels would you expect to harvest this fall? _____
 Check with the **Kansas Corn Commission and Corn Growers** for the correct answer and learn about foods that are made from corn.

9. 100 years ago it took 2 to 3 days to harvest 1 acre of wheat. With today's modern equipment, how long does it take one combine to harvest an acre? _____
 What season of the year do the combines go to work in Kansas to harvest our number one crop? _____
 What season is wheat planted in Kansas? _____
 Why is most of the wheat planted in Kansas called hard red winter wheat? _____
 The people with all the answers are the people who grow wheat, the **Kansas Association of Wheat Growers**.
10. Many different foods are made from soybeans. The **Kansas Soybean Ladies** are experts on soybeans. Check the list at their exhibit for the types of foods made from soybeans and name four here.
 1. _____ 2. _____ 3. _____ 4. _____
11. Weeds can significantly reduce crop yields. For this reason county weed directors have an important job working with property owners in the state of Kansas to reduce noxious weed infestations. Visit the exhibit sponsored by the **County Weed Directors of Kansas** to find the answers to these questions.
 Research has shown that a severe bindweed infestation can reduce a wheat crop yield by _____ percent and a grain sorghum crop yield by _____ percent
12. Every year Kansas forests and woodlands grow a net volume of 80 million board feet of wood. Do you know what a board foot is? The **Kansas State University Department of Forestry** can show you a board foot. How many average size homes could be built from the wood grown in Kansas each year? _____
13. Statistics, the collection, analysis, interpretation and presentation of facts and figures, is very important work to the agricultural industry. Statistics on the Kansas industry are collected by **Kansas Agricultural Statistics**, formerly the Kansas Crop and Livestock Reporting Service. Those statisticians know all about acres, bushels and many other things. and they like answering questions. Find out from them:
 What is the land area of the state of Kansas in acres? _____
 How many acres are used for farming? _____
 Then, figure how many acres are used for non-farm purposes? _____
14. At least four things are necessary to raise a crop in Kansas. Can you name them? 1. _____ 2. _____ 3. _____ 4. _____
 If you need help find the answers at the **Kansas Crop Improvement** exhibit.
15. The dairy cow is truly an amazing milk machine.
 How many glasses of milk does the average dairy cow produce each day? _____
 Cows must drink lots of water to produce milk.
 About how much water does a dairy cow drink each day to produce milk? _____
 See the experts on dairy facts at the **Midland Dairy Association** exhibit.
16. Earlier you learned that most of the wheat grown in Kansas is hard red winter wheat. Various types of flour are made from the different types of wheat. Flour made from Kansas wheat is best used to bake what foods? _____
 Find this answer and the reason why at the **Kansas Wheat Commission** exhibit.

7. Mother Nature is a farmers friend, but she can be his enemy. There is no guarantee that she will let a Kansas farmer harvest every acre planted. How many acres which are planted each year in Kansas will never be harvested? _____ The Federal Crop Insurance Corporation can provide you the answer.

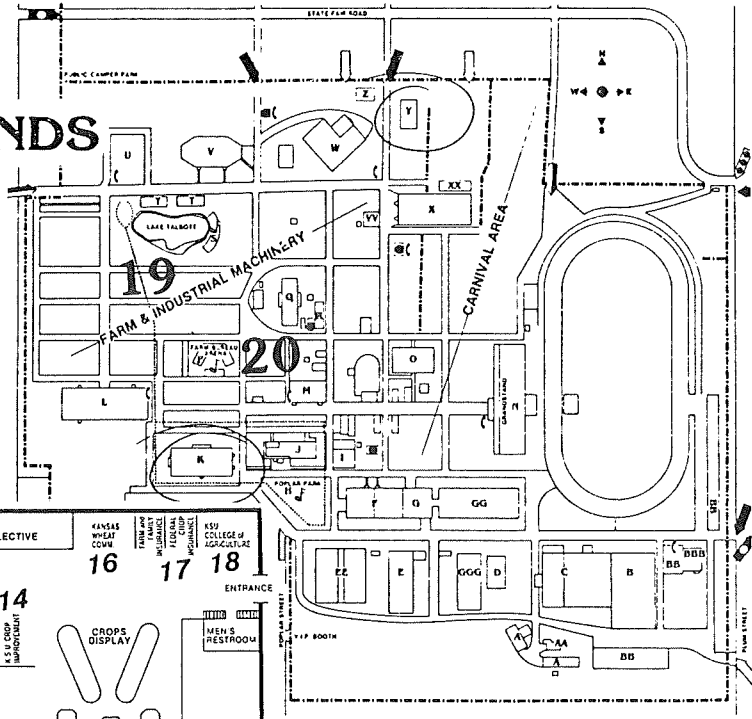
18. Kansas State University offers the only educational degree programs in the free world in the areas of _____, _____, and _____. Visit the KSU exhibit to learn about the school Willie Wildcat attends.

19. Farmers must have equipment to raise crops and feed livestock. A tractor is as important to a Kansas farmer as a truck is to an independent trucker or a printing press is to a printer who owns his own business. Visit one or more of the machinery dealers exhibiting at the fair to ask how much a tractor costs. _____ Then figure how many cars your family could buy for the same price if you could buy a car for \$10,000. _____

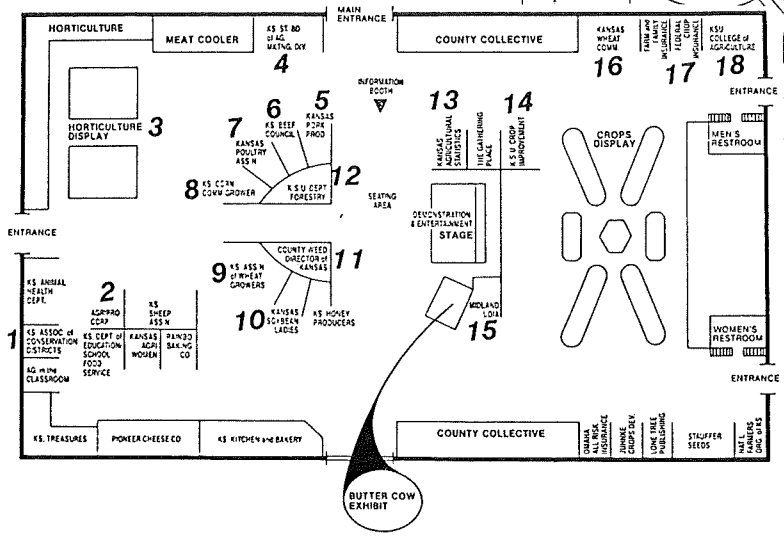
20. In the U.S. we spend 12.7% or 12.7 cents of every dollar earned for food. Visit the Kansas Farm Bureau exhibit to see the Food Globe where you can compare this figure with the amount spent on food in other countries. What percent of personal spending is spent for food - in the Soviet Union? _____ in People's Republic of China? _____

The average American works 3 minutes to earn enough money to buy a loaf of bread. How many minutes would you have to work to buy a loaf of bread - in the Soviet Union? _____ in People's Republic of China? _____

Guide TO THE FAIRGROUNDS



K - PRIDE OF KANSAS BUILDING



For further information about AG IN THE CLASSROOM write: Kansas Foundation for Agriculture in the Classroom Bluemont Hall, KSU, Manhattan, Kansas 66506 913-532-7946

ANSWERS TO 1988 AG-CITING EXPERIENCE ACTIVITY SHEETS

Pre-School and Kindergarten

- *circle - tomatoes, green peppers, grapes - they grow above ground
- *X - carrots, potatoes - they grow below ground
- *Poultry - circle - cracked corn
- *Cattle - circle - alfalfa hay, silage, grasses
- *Swine - circle - cracked corn
- *Rabbits - circle - alfalfa pellets
- *Horses - circle - oats, alfalfa hay
- *Goats and Sheep - circle - oats, grasses, alfalfa hay

First and Second Grade

1. chicken-coop; pig-pen; horse-stable; duck-pond
2. goat-hair; rabbit-fur; chicken-feathers; calf-hair
3. The machine used to harvest grain is the combine.
4. 1-combine; 2-flour mill; 3-bakery; 4-bread
5. wheat-flour and spaghetti; corn-corn oil and margarine; soybeans-margarine; oats-oatmeal.
6. The largest pumpkin at the 1986 Kansas State Fair weighed 252 pounds. The largest watermelon weighed 94 pounds.

Third and Fourth Grade

1. 26,000 cattle brands are currently registered in Kansas.
2. The nutrient needed by plants beginning with an "n" is nitrogen.
3. Sheep are generally sheared once a year. About 4 pounds of wool is sheared from one Kansas lamb.
4. The largest pumpkin at the 1986 Kansas State Fair weighed 252 pounds. This pumpkin would make about 200 pumpkin pies.
5. 52,344,320 total acres and 47,900,000 acres of farmland in Kansas
6. A pig weighs about 220 pounds when sent to market.
7. Tallow is a wax obtained from melted beef fat.
8. One chicken will lay about 252 eggs in one year--enough to fill 21 cartons.
9. Kansas wheat is harvested in the summer. 319.6 million bushels were harvested in 1988. 70 loaves of bread can be made from the flour made from one bushel of wheat.
10. Cooking oil, margarine, spoonable and pourable dressings, and shortening are made from soybeans.
11. The butter cow at the 1986 Kansas State Fair weighed 1000 pounds. The average dairy cow produces 72 8-ounce glasses of milk and drinks a bathtub full of water, 25-35 gallons, each day.
12. The three types of honeybees are queen, drones and workers.

Fifth and Sixth Grade

1. Farmers build terraces for soil conservation. It takes 100 years to form an inch of topsoil.
2. A return address for cattle is a brand.
3. \$37,716,704 worth of food was purchased last year for school lunches.
4. The mineral iron is very important to the health of a baby pig.
5. Rainbo Baking Company uses 19,691,823 pounds of flour each year.
6. Wool will not burn.
7. "FROM THE LAND OF KANSAS" is a trademark.
8. Pork is the leading source of thiamine.
9. Nutrient dense means a high proportion of nutrients to calories.
10. The largest chicken eggs are jumbo.

11. Corn and soybeans are planted in the spring and harvested in fall. Wheat is planted in the fall and harvested in the summer.
12. A beehive is an apiary. A beekeeper is an apiarist. Bees make honey and beeswax.
13. Research has shown that a severe bindweed infestation can reduce a wheat crop yield by 30% and a grain sorghum crop yield by 78%.
14. Yes. Kansas forests produce enough lumber each year to build 10,000 houses.
15. Breads and other wheat foods provide protein and carbohydrates.
16. Seed, soil, water and sun are necessary to raise a crop.
17. Milk is pasteurized to kill harmful germs and homogenized to break up fat.
18. Popcorn is a very nutritious snack.

What's Your Agricultural I.Q.?

1. It takes 100 years to make an inch of topsoil. About 90 million tons of topsoil are lost each year in Kansas.
2. NPK stands for nitrogen, phosphorus and potassium.
3. Some vegetables commonly called pumpkins are actually squash. A genuine pumpkin has a 5-sided stem.
4. Foods and beverages that result from the processing of farm commodities and other raw products are value-added products.
5. Pork is the leading source of thiamine.
6. Beef helps form antibodies to fight infection.
7. A chicken lays one egg per day for five days out of seven or about 252 eggs in a year, enough to fill 21 cartons.
8. An acre of corn might yield 130 bushels per acre this fall.
9. It now takes less than 30 minutes to harvest an acre of wheat. Combines harvest wheat in Kansas in the summer. Wheat is planted in the fall. The wheat planted in Kansas is called hard red winter wheat because it is planted in the fall and goes dormant in winter. It has a reddish color and is hard.
10. Cooking oil, margarine, spoonable and pourable dressings, and shortening are made from soybeans.
11. A severe bindweed infestation can reduce a wheat crop yield by 30% and a grain sorghum crop yield by 78%.
12. 10,000 homes could be built from Kansas wood each year.
13. The land area of the state of Kansas is 52,344,320 acres. 47,900,000 acres are used for farming. 4,444,320 acres are used for non-farm purposes--cities, roads, etc.
14. Seeds, soil, water and sun are necessary to raise a crop.
15. The average dairy cow produces 72 8-ounce glasses of milk each day. A dairy cow drinks a bathtub full of water, 25-35 gallons, each day.
16. Flour made from Kansas wheat is best used to bake yeast breads and rolls.
17. 1 of 18 acres planted each year in Kansas will never be harvested.
18. Kansas State University offers the only programs in milling science, baking science and feed science.
19. This answer depends on the price of the tractor.
20. 33.7% of personal spending is spent for food in the Soviet Union -60% in China. You would have to work 8 minutes in the Soviet Union to buy a loaf of bread-200 minutes in China.

Answers provided by Kansas Foundation for Agriculture in the Classroom, Bluemont Hall 124, Kansas State University, Manhattan, KS 66506; 913-532-7946



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JOSEPH A. LIEBER
Executive Vice President

DATE: January 26, 1989

TO: Senate and House Agriculture Committees

FROM: Joe Lieber, Executive Vice President of the
Kansas Cooperative Council and
Vice Chairman of the Kansas Foundation for Agriculture
in the Classroom

RE: Ag in the Classroom

Members of the Committee:

I would like to express my personal support and the support of the Kansas Cooperative Council for the Kansas Ag in the Classroom program.

As a member of the Foundation for the past four and a half years I have seen the results of the efforts of the Foundation and its supporters.

You have heard reports on what the Foundation has done and is doing to teach the students of Kansas about its number one industry, agriculture. I think the Foundation has made great strides since its inception, and its future goals reflect a willingness to do more.

These results did not come easily but were accomplished by a lot of hard work and dedication by people interested in agriculture, including some of you in the Legislature.

I taught school for fourteen years and have a Masters Degree in Education as well as an Administrative Certificate, so I feel I know a little bit about education.

I've seen a lot of programs introduced into the schools of Kansas, but I don't know of any that has accomplished their goals as well as the Ag in the Classroom.

This is why I and the Kansas Cooperative Council feel the Foundation is worthwhile.

I sincerely hope that the Legislature continues to support this program.

Thank you.

Senate Agriculture
1-26-89
attachment 3