

Agriculture --- In Touch With You Daily!

Objective: The student will learn how products and by-products of agriculture affect us every day.

Grade Level

1-3

4-6

TEKS:

S- 1.1; 1.2A-E; 1.5A
S- 2.1; 2.2A-F; 2.5A,B
S- 3.1; 3.2A-E

S- 4.1; 4.2A-E; 4.3B
S- 5.1; 5.2A-E; 5.3B
S- 6.1; 6.2A-E 6.5B

TAKS:

GRADE

OBJECTIVES

Reading	3, 4, 5, 6
Writing	4
Science	5

1, 3, 4
1, 2
2, 3, 4

Assessment Summary:

Materials:

- < Background information, "Agriculture...In Touch With You Daily"
- < Bulletin Board pictures of products derived from various commodities
- < List of products that contain agricultural by-products from corn, cottonseed, soybeans, wheat and rice (included in lesson)
- < Computer with Internet access

Assessment:

1. Students will complete multiple choice questions.
2. Teacher evaluated, grade appropriate activities.
3. Students will choose an agricultural crop and write an informative composition about how we benefit from that crop.

Background Information


Agriculture ----- In Touch With You Daily!

Whether or not we raise crops or livestock for a living, we are all involved in agriculture. Why? Because we eat, wear clothes, and benefit from all the by-products that come from the plants and animals raised on farms and ranches in Texas and the United States.

Think about how agriculture touches you throughout each and every day. When you went to bed last night you were probably sleeping on sheets made from cotton. When you took your shower or washed your face this morning you used soap that contained oil from corn, soybeans or cotton and fats from cattle. How about the milk, toast, cereal, juice or other breakfast foods you ate? They were grown on a farm or ranch. The paper bag you packed your lunch in and the notebook paper you did your homework on were made from trees that were planted on a tree farm, not to mention the lumber used to build the house or apartment you live in.

Many other products we use daily come from plants and animals, but are not as obvious. These items are made from by-products of plants or animals. A by-product is something left over after using a raw product for making something else. For example, when cotton is processed, the cotton fiber is removed from the cottonseed. The fiber is turned into cloth, which is used in sheets, blue jeans and shirts. The cottonseed can be processed into cottonseed oil, cottonseed meal and cottonseed hulls. These can be made into useful by-products. The oil can be used as cooking oil, or as an ingredient in mayonnaise, salad dressing, cosmetics, soaps, plastics and many other products we use every day. The meal from the cottonseed can be used for livestock feed, fertilizer and fish bait. The hulls can also be used as an ingredient in livestock feed, plastics, and synthetic rubber. Linters, which are the short hairs that cling to the seed after the longer fibers have been removed, go into everything from photographic film and paper currency, to cellulose products used in ice cream, chewing gum and maple syrup.

Many useful items come from corn, soybeans and other plants grown by farmers. Besides the obvious corn products like corn chips, corn meal and cereal, many other items we use every day are derived from by-products of corn. Most processed foods and beverages such as soda water are sweetened, not with sugar, but with corn syrup. Corn oil is used extensively for cooking oil and in margarine, soup, potato chips and other processed foods. Corn starch is used in aspirin, antibiotics, chewing gum, cosmetics and many bakery products. Corn can also be turned into a fuel called ethanol which can be used to power automobiles. A lot of the corn grown in Texas is used as livestock feed.

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Soybeans is a crop grown by farmers that provides many food and non-food products that we have come to depend on. Soybean oil is not only used for cooking, but is an important ingredient in paint, cosmetics, bread and pastry, printers ink, pesticides, rubber and plastics. Soybeans are used in candy and cereal, as a substitute for meat products and in medicines and pharmaceuticals.

Science and technology have discovered ways to use nearly every part of animals such as cattle, sheep, goats, and swine to give us all kinds of useful products. By-products that come from these livestock include leather goods, ingredients in cake mixes, ice cream, yogurt, candles, soap, chewing gum, crayons and even medicinal drugs.

So---- are you involved in agriculture? You bet, agriculture touches you daily!

Agriculture...In Touch With You Daily!

Procedure

1. Introduce new vocabulary

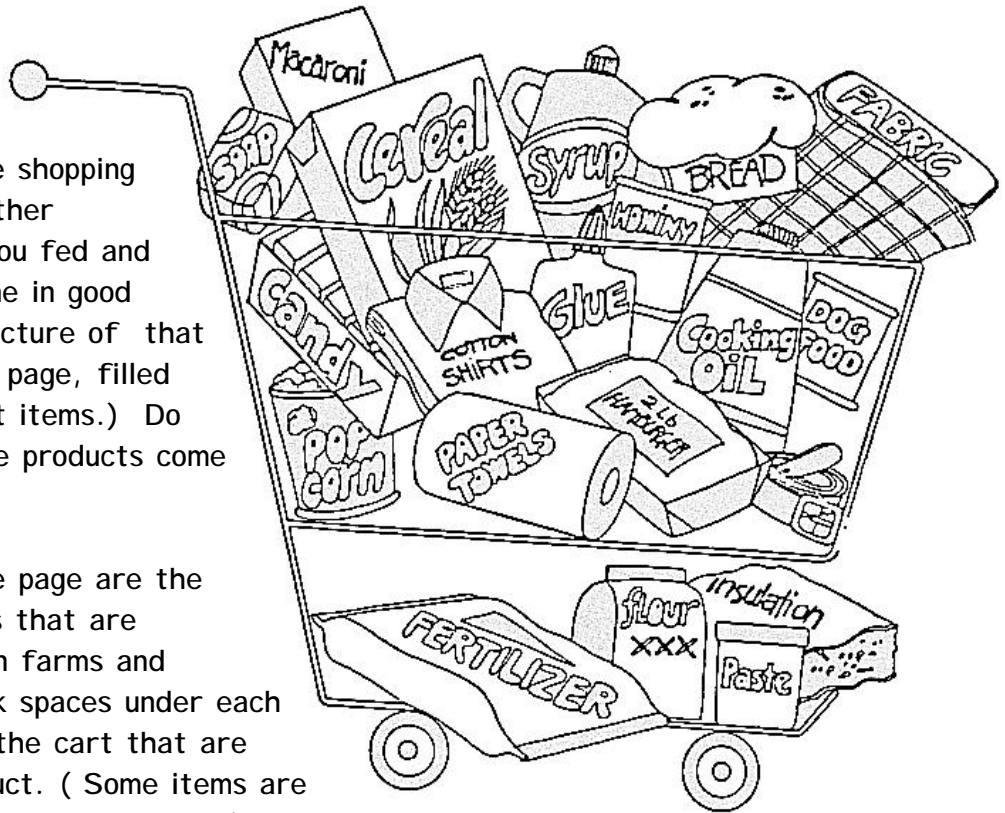
Grades 1-3
product
drugs

Grades 4-6
by-product
pharmaceutical
ethanol
technology

2. Have students read background information or lead discussion based on background information. Discuss products students use every day that come from agriculture. Include the obvious, such as food and clothing, but also have them think about agricultural by-products we use daily.
3. Using the by- product lists included in the lesson, collect and bring to class some of the products we use that we don't think of as containing agricultural by-products.
4. Complete "Let's Go On A Shopping Spree" Activity.
5. Activity: As a homework assignment have students examine ingredient labels of products they have at home to see which contain agricultural by-products. Have students list the products and agricultural by-product each contains.
6. Grades 1-3: Have students use pictures from magazines and newspapers to write descriptive words and/or sentences about a crop or livestock of their choice. Students should complete their project by drawing a picture of the crop or livestock and at least one product we get from it.
7. Grades 4-6: Students will use 3 resources, including the Internet, to research an agricultural crop or livestock of their choice. Their research should be presented in a classificatory or descriptive report telling how that crop or livestock touches us daily through the by-products derived from it.

Let's Go On a Shopping Spree!

Every week your parents go to the store and load up the shopping cart with food and other products that keep you fed and clothed and your home in good repair. (There's a picture of that shopping cart on this page, filled with lots of different items.) Do you know where these products come from?



At the bottom of the page are the names of some things that are produced on American farms and ranches. In the blank spaces under each one, list items from the cart that are made from this product. (Some items are made from more than one ingredient.)

CORN	COTTON	WHEAT	BEEF	SOYBEANS

Agricultural By-products Review

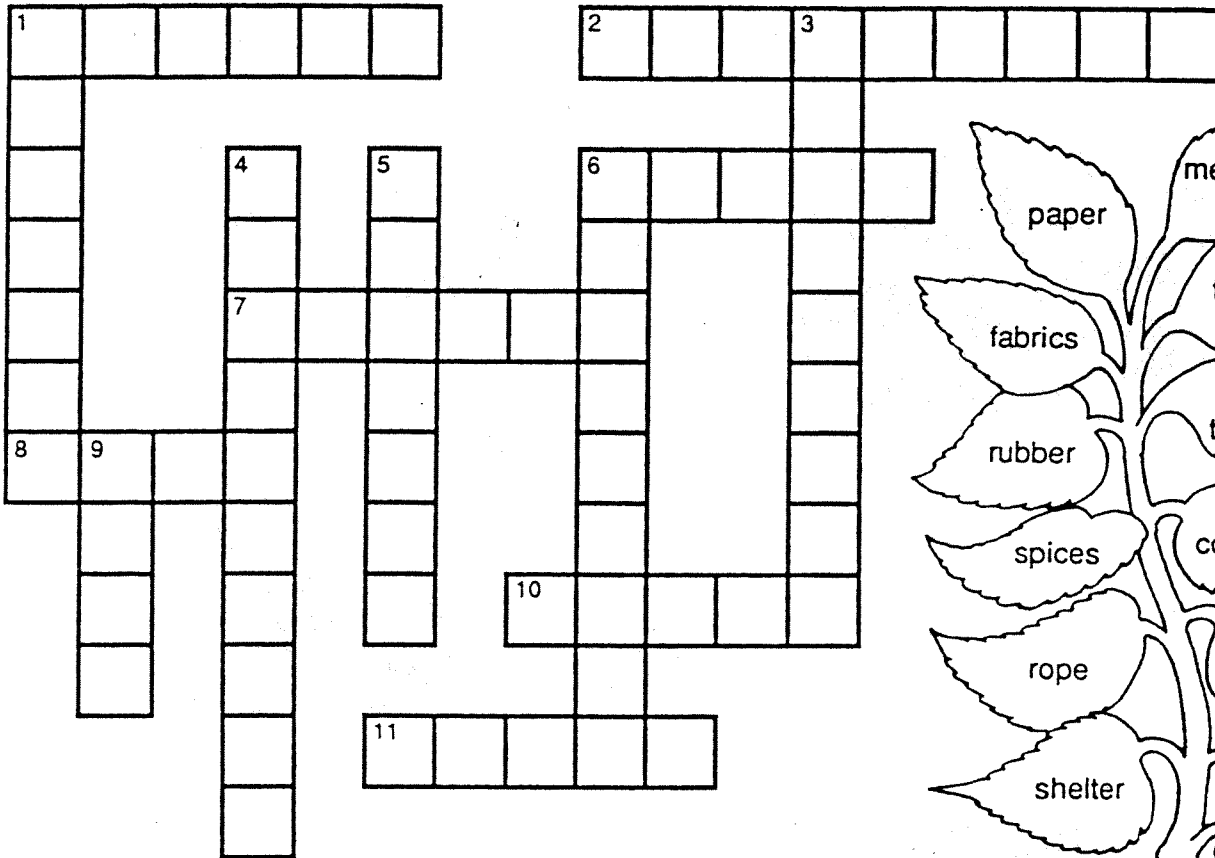
Fill in the circle next to the correct answer.

1. Agriculture
 - A is not very important to us
 - B gives us only food and clothing
 - C provides many other things besides food and clothing
 - D is only for farmers and ranchers
2. Products that come from processing raw material and can be made into other useful items are called
 - A waste products
 - B by-products
 - C inventory
 - D livestock
3. Corn can be used for which of the following?
 - A cooking oil
 - B margarine
 - C sweetener
 - D all the above
4. True or False
The only use for cotton is in clothing.
 - True
 - False
5. Animals such as cows, sheep and swine are called
 - A livestock
 - B critters
 - C by-products
 - D shepherds
6. The paper this test is written is made from
 - A sheep
 - B corn
 - C trees
 - D cows

Was That a Plant?

Without plants there would be no life on the earth because humans and animals depend on plants for food and oxygen. Also, many products that people use every day are made from plants.

Read the clues about plant products. Then complete the puzzle using the words on the leaves of the plant.



Across

- 1. food seasonings made from seeds or dried leaves
- 2. perfume and lotion made from flower oils, and lipstick made from seaweed
- 6. fruits, vegetables, grains
- 7. used for tires; made of latex from trees
- 8. used for tying boxes; made from leaf fibers
- 10. coal, oil, natural gas from decayed plants
- 11. used for writing; made from wood fibers

Down

- 1. a home for people and animals
- 3. cures for disease made from bark, dried leaves, mold, roots
- 4. paint remover made from pine pitch
- 5. materials made from cotton and flax plants
- 6. desks, tables, chairs made of wood from trees
- 9. liquids taken from seeds or fruits used in cooking and making soap

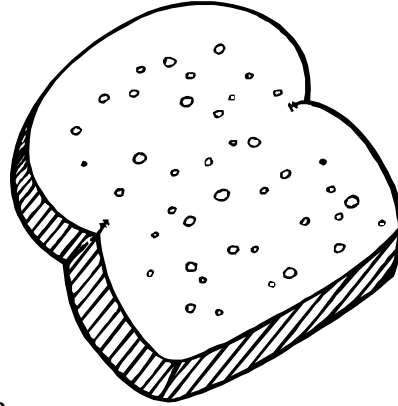
Challenge! List all the products you have used today that might have come from plants.

Fold-Under Answers: Across—1) spices 2) cosmetics 6) foods 7) rubber 8) rope 10) fuels 11) paper

Down—1) shelter 3) medicines 4) turpentine 5) fabrics 6) furniture 9) oils

WHEAT BY-PRODUCTS

•Bread



•Buns

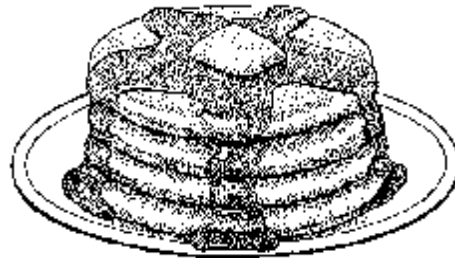
•Rolls

•Pasta

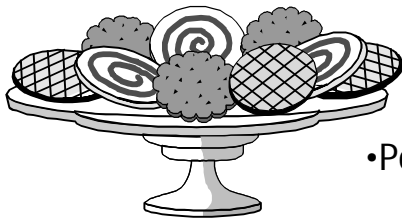
•Pancakes

•Cereals

•Crackers



•Cookies



•Livestock Feed

•Poultry Feed

•Fish and Shrimp Feed

•Plastics



SOYBEAN BY-PRODUCTS

OIL PRODUCTS

- Coffee Creamers



- Cooking Oils
- Margarine

- Mayonnaise
- Disinfectants
- Electrical Insulation

- Fungicides

- Inks - Printing

- Medicinals

- Pharmaceuticals
- Salad Dressings
- Sandwich Spreads
- Paints
- Pesticides
- Putty



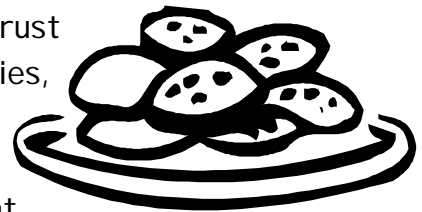
- Soap/Shampoos/
Detergents

WHOLE SOYBEAN PRODUCTS



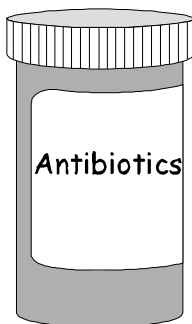
- Baked Soybeans
- Bread
- Candy
- Doughnut Mix
- Frozen Desserts

- Pancake Flour
- Pie Crust
- Candies,
Confections,
& Cookies
Ingredient



- Crackers

SOYBEAN PROTEIN PRODUCTS



- Antibiotics
- Cosmetics
- Baby Food
- Bakery Ingredients
- Candy Products
- Cereals
- Inks
- Livestock Feeds



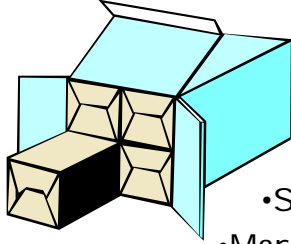
- Poultry Feeds
- Pet Foods
- Paints - Water Based
- Plastics
- Pesticides/Fungicides
- Meat Products
- Noodles
- Sausage Casings



COTTONSEED BY-PRODUCTS

FROM THE KERNEL

•Livestock



- Snack Food Frying
- Salad and Cooking Oil
- Mayonnaise
- Salad Dressing
- Margarine

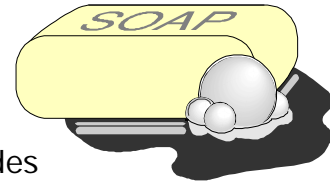
•Cosmetics

•Rubber

•Plastics

•Fungicides

•Insecticides

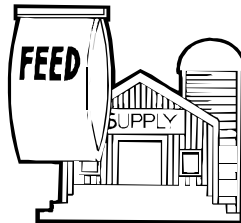


•Soap

•Explosives

FROM THE HULLS

- Livestock Feed
- Synthetic Rubber



•Plastics

FROM THE LINTERS

•Plastics

•Dynamite

•Bologna

•Sausages

•Frankfurters

•Cosmetics

•Paint

•Toothpaste

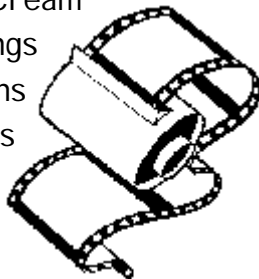
•Ice Cream

•Salad Dressings

•Outdoor Signs

•Windshields

•Photographic and X-ray Film



•Recording Tapes

•Transparent Tape

•Clothing

•Twine

•Rugs

•Mops

•Furniture

Upholstery

•Mattresses

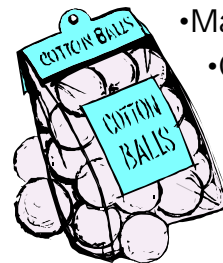
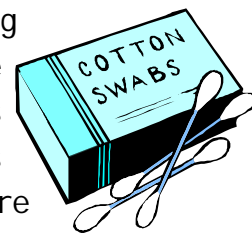
•Cotton Swabs

•Cotton Balls

•Papers

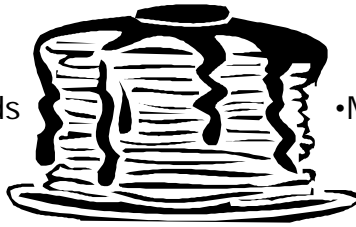
•Fine Writing Paper

•Currency



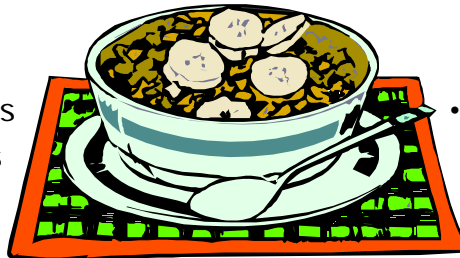
RICE BY-PRODUCTS

Rice Flour



- Bakery Foods
- Breakfast Cereals
- Meat Products
- Pancake and Waffle Mixes

Rice Bran



- Cereals
- Mixes
- Vitamin Concentrates

Rice Hulls



- Fuel
- Mulch
- Abrasives

Broken Kernels

- Pet Foods
- Rice Flour

Rice Bran Oil

- Mayonnaise/Salad Dressings/Other Emulsified Products
- Vegetable Cooking Oils

Baby Foods



Rice Cereals