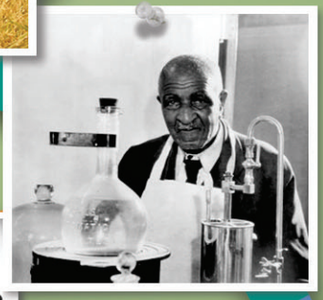
DESERET
Morning News

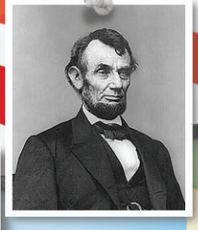
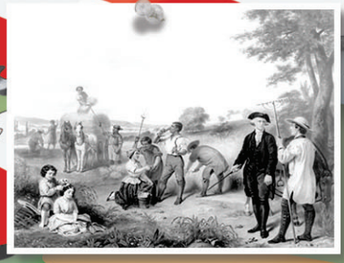
GROWING A NATION

Food, Land & People





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newspapers in education

November 9, 2004

Growing A Nation

Imagine you are on a journey to America. You are leaving behind everything you have known in the Old World for untold dangers ahead. You are willing to take the risk because you hope to start a new life in a place where you will be free to work hard on your own land. The New World means a new life—a life of possibilities.

Across the Atlantic Ocean, in America, historic events are developing a different way of life for the common citizen of the United States. Vast, rich lands set the stage for a people free to make their dreams a reality. Their hard work earns real cash, free time and a life beyond basic needs. Their system of government is the foundation for this prosperity, laid down on the good fortune of free, plentiful land and a century-long experiment in democracy.

How have the practices of this new kind of government supported a revolution in agricultural science, technology and education? How has agriculture helped the United States of America become a prosperous, thriving nation and major world power? How has agriculture made us different as Americans? Consider the answers to these questions as you enjoy this Deseret Morning News, Newspapers in Education issue on "Growing a Nation."

Books to Grow On

Books grow and expand the mind. The books featured on this page will help you to learn more about food, land and people or agriculture. There are at least five good reasons why you need to learn about agriculture:

1. You need to know where your food and clothing come from – what it really takes to get a loaf of bread to the grocery store or a pair of jeans to the mall.
2. How American farmers and ranchers and our food systems seem to effortlessly provide us with safe, inexpensive food with so much variety, quality and abundance (answer: the hundreds of people who work in agriculture to support what a farmer does).
3. How bountiful agriculture directly impacts your quality of life, your health and environment.
4. How a productive agriculture frees most of us to work in other areas such as; medical research, space travel, computer technology, art, music, literature, philosophy and recreation.
5. Because you can't have an ag-less day.

(See page 10)

These books should be available in your local library. A description of these books and a comprehensive list of other agricultural books can be found in the literature section of our Web site, **www.agclassroom.org/ut**.

Literature Connections

Eating the Plates by Lucille Recht Penner
ISBN 0590469754
The Summer My Father Was Ten by Pat Brisson
ISBN 1563978296
Tomatoes, Potatoes, Corn and Beans by Sylvia A. Johnson
ISBN 0689801416
Apple Pie 4th of July by Janet S. Wong.
ISBN: 015202543X
The Scrambled States of America by Laurie Keller
ISBN: 0805068317

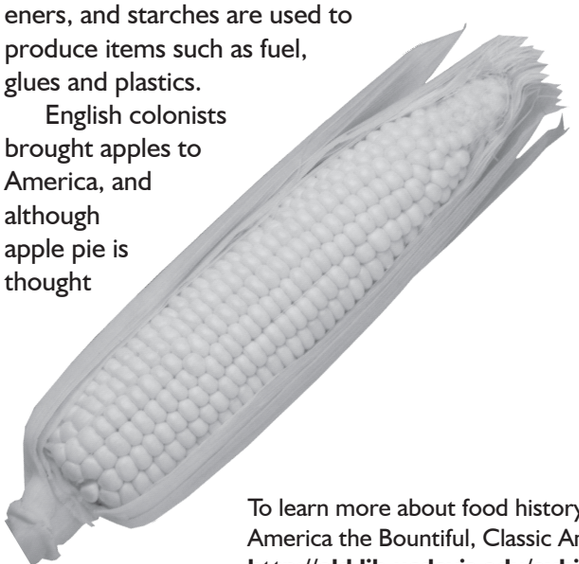
Harvesting History

Americans celebrate with food. Whether New Year's Eve, Memorial Day, the 4th of July, or Thanksgiving, Americans commemorate holidays with favorite family recipes. American history reveals that food, for the most part, has been bountiful, diversified and sustaining. Some foods we eat today are "Old World" foods, but most are "New World" foods. Some dishes have endured from colonial times to present day.

Using the native foods of the colonies the Pilgrims at the first Thanksgiving in 1621 might have feasted on lobster, cod, wild goose, turkey, rabbit, venison, Indian corn pudding, pumpkin, carrots, onions, nuts and grapes. Classic American cuisine is the story of millions of cooks who took locally available foods and ingredients and created thousands of dishes. Ten foods form the core of American cuisine: apples, beans, beef, chicken, corn, greens, potatoes, pork, turkey and wheat.

Corn or maize was first grown in Mexico; it reached the United States about 800 years ago. Native Americans grew corn together with beans and squash. Each plant helped the other to grow; the corn stalk served as a pole for the beans to grow on; the beans supplied the corn with nitrogen it could take from the air and make available to the corn through its roots. The large leaves of the squash plant shaded the soil to help retain moisture and discourage weeds. The word corne, spelled today as corn, comes from the Old English term for grain and specifically is used to designate wheat. When the English-speaking Pilgrims saw maize for the first time, they called it Indian corne because they did not know or recognize the plant, but they knew it was a grain.

Today corn is grown in every state, but the "Corn Belt" states are Indiana, Illinois, Iowa, Missouri, Nebraska and Kansas. Corn is used in hundreds of foods, and corn oils, sweeteners, and starches are used to produce items such as fuel, glues and plastics.

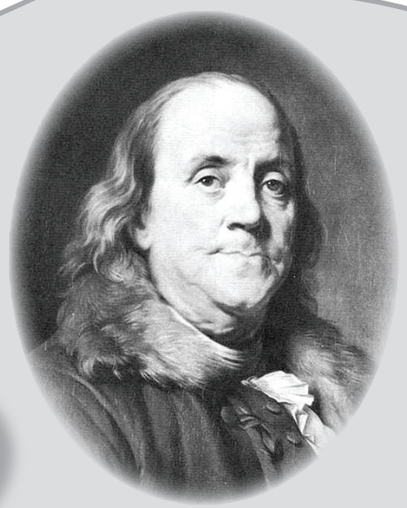


English colonists brought apples to America, and although apple pie is thought to be the "all-American" dish, it is a British invention. Americans did develop several varieties: Golden and Red Delicious, Jonathan and McIntosh. More than 2,500 varieties of apples grow in America today, and 4,300,000 tons are produced annually. More accurately pumpkin pie is the "all-American" dish.

Turkeys have been an important part of Thanksgiving right from the beginning. Wild turkeys are native to the Americas. They were probably first tamed and raised for food and for their colorful fathers by Native Americans. Christopher Columbus, Hernando Cortez and other explorers liked eating turkey and brought birds back to Spain. European-bred turkeys were brought back across the Atlantic and mixed with the American birds to produce a variety of the common breeds we see today. Until about 1935, farmed turkeys were raised mostly for their colorful feathers. But Americans began to demand more turkey meat. Today, turkey farmers raise white birds because the colored feathers leave dark marks under the skin and people don't like to see the dark marks on the skin. There are about 2,000 turkey farms in the U.S. A typical full-time turkey farmer raises 50,000 birds each year. Because turkey is a nutritious and versatile food it is available year round, not just at Thanksgiving.

Change always has characterized America. Innovation and creativity define American cuisine. Americans developed new dishes with many regional variations. While regional patterns have become blurred in the late 20th century, American cuisine continues to grow in three directions: (1) the consistent use of the 10 foods mentioned above, (2) the adaptation of foods brought by "new" immigrants and, (3) the evolving ideas of new food technologies.

To learn more about food history check out these Web sites:
America the Bountiful, Classic American Food from Antiquity to the Space Age: **http://old.lib.ucdavis.edu/exhibits/food/index.html**
Key Ingredients, America by Food: **www.keyingredients.org**
Food Timeline: **www.gti.net/mocolib1/kid/food.html**



"There seems to be 3 ways for a nation to acquire wealth: the first is by war...this is robbery: the second by commerce, which is generally cheating: the third by agriculture, the only honest way."

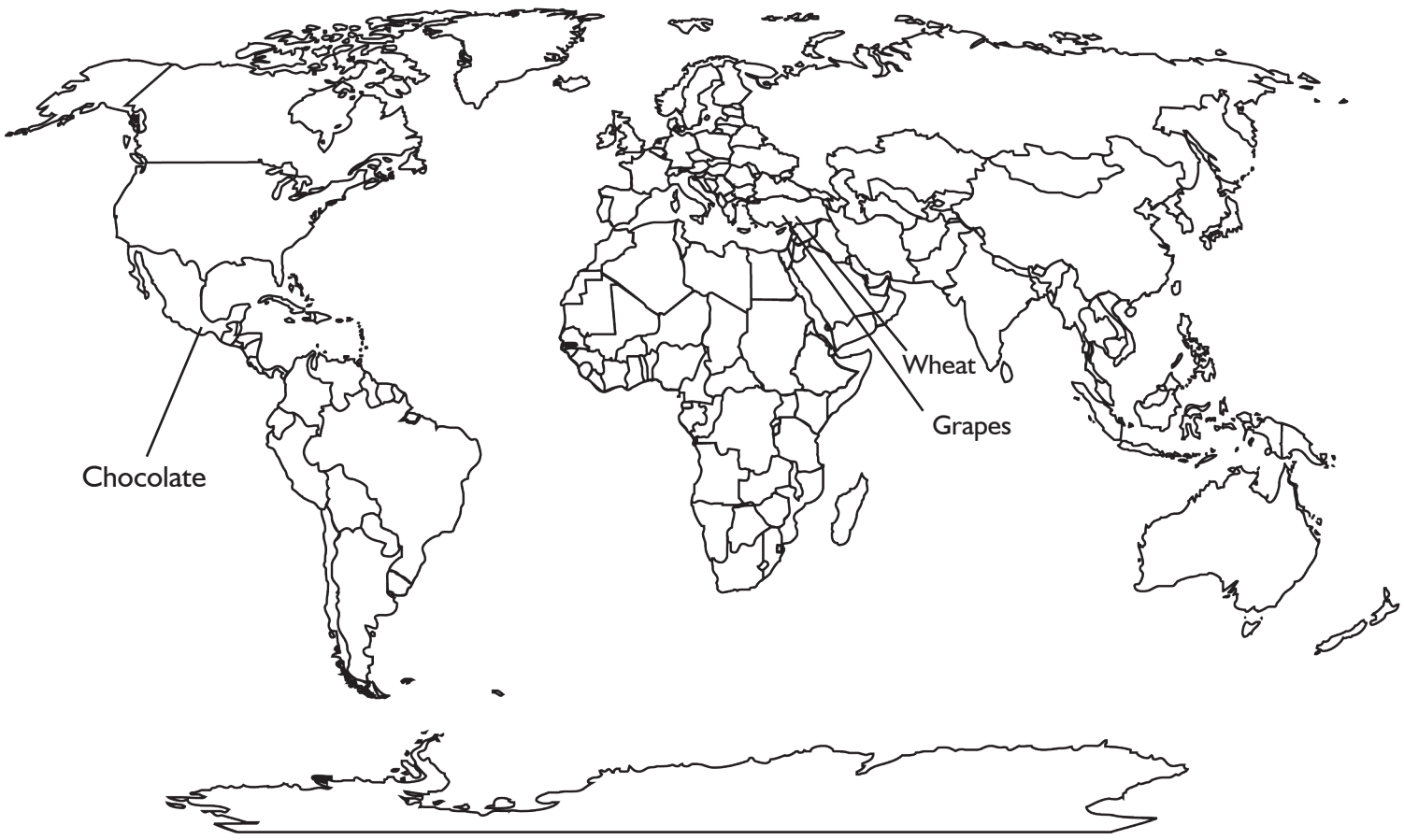
Benjamin Franklin
American statesman and inventor
1706-1790

Activity

You've probably heard the story that Benjamin Franklin did not want the bald eagle to be our national symbol – he wanted America's symbol to be the turkey! Is this story true? What is that red thing that hangs under a turkey's chin? (Do turkeys even have chins?) Do both male and female turkeys have that red thing? What color are turkey eggs? What part of a turkey is called the caruncle? What percentage of Americans really eat turkey on Thanksgiving Day? (Hint: It's not 100%)! What are the top 3 turkey-producing states? Can turkeys fly?

These are important questions that thoughtful Americans ponder each November. Visit this Web site: **www.uen.org/utahlink/activities/view_activity.cgi?activity_id=4579** to answer the questions for each question and to learn more about Ben Franklin's favorite bird.

Origin of Foods from Plants and Animals



Long ago, people could eat only what they grew or what they could catch. They couldn't just go to the grocery store and buy whatever was on the shelf. In 1492, when Christopher Columbus came to America, he saw plants and animals he had never seen before. He took them back with him to Europe. Columbus' trips were the beginning of an exciting time in the history of food. People would be able to taste different foods; foods with flavors, shapes, and textures they had never experienced before!

It is estimated that nearly two-thirds of the foods consumed today are from the "New World" or the Americas. Right this minute, people all over the world are eating, or shopping for food or preparing food to be eaten. It is a way of life. Everyone must eat to survive. What are they eating? Often times that depends on where they live. What plants and animals live in that area? What kinds of transportation are available to the area? Can planes, ships, or trucks deliver food that was grown in another part of the world?

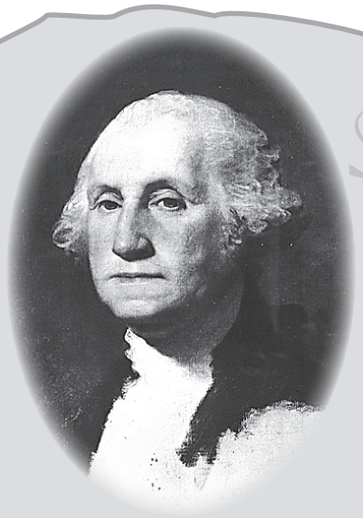
What foods have you consumed this week? Where did they originally come from? Where are they grown today? The world map on this page shows the origin of many of today's common foods. What percentage of what you consumed came from the "New World?" to learn more about the origin of our farmed crops and animals, visit the Food Timeline web page (www.foodtimeline.org).

Where in the World....

Look at the following New and Old World foods and then locate where they originated on the world map like the examples of chocolate, wheat and grapes.

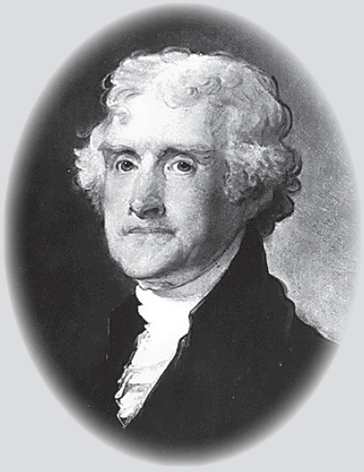
Old World Foods
Broccoli, Northern European Coast
Carrots, Central Asia (Afghanistan)
Cattle, Turkey
Coffee, Ethiopia
Egg Plant, India
Grape, Turkey
Lettuce, Asia Minor (Iran & Turkistan)
Okra, Africa
Onions, Pakistan
Oranges, Pakistan
Peas, Northwest India & Afghanistan)
Pigs, South West Asia
Radish, China
Rice, India
Sheep & Goats, Middle East (Iraq, Iran)
Soybean, Northeastern China
Sugar Beets, Europe (Austria)
Wheat, Turkey
Yams, Africa

New World Foods
Avocado, Southern Mexico
Beans, Central America
Cacao (chocolate), Southern Mexico
Corn, Central America
Cranberry, Northeastern America
Peanuts, South America (Bolivia)
Peppers, Central America (Peru)
Pineapple, South America (Brazil & Paraguay)
Potatoes, South America (Bolivia)
Pumpkins, Mexico
Squash (summer), South America
Strawberries, North America (Pennsylvania)
Sunflowers, North America (Nebraska)
Tomatoes, Southern Mexico
Vanilla, Southern Mexico



"I know of no pursuit in life in which more real and important services can be rendered to any country than by improving its agriculture, its breed of useful animals, and other branches of a husbandman's care."

George Washington
general, president and farmer
1732-1799



"Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most wedded to its liberty and interests, by the most lasting bonds."

"The greatest service which can be rendered any country is to add a useful plant to its culture."

"Agriculture, manufacturers, commerce, and navigation, the four pillars of our prosperity, are the most thriving when left most free to individual enterprise."

Thomas Jefferson
statesman, president and farmer
1743-1826

Activity

Here are some of those achievements by four American presidents. Fill in the missing letters, and then transfer the same letters in order, on the spaces below to discover one final message.

George Washington was a farmer all of his life, except when he was fighting in the Revolutionary W__r. He liked to test new ways of plantin__ crops and using tools. Washington often w__ote about his love of the land and h__s home, Mount Vernon. He built one of Ameri__a's most unus__al barns with 16 sides to process foods inside and reduce waste. Washington promoted conservation, crop rotation and good til__age practices. He was the first farmer in American his__ory to breed m__les and use them to pull a plow in his fields.

Thomas Jefferson was also a lifelong fa__mer, who agre__d with Washington that America's finest resource was its land. Some of Jefferson's most important contributions to a__riculture were the use of fe__tilizer and contour plowing. He was __ne of America's first farmers to bring crop rotation methods to his farm, to rene__ his soils and reduce erosion. When Jefferson was __n foreign lands, he sent new types of pla__ts back to America. Some of these plants included olives, rice, ve__etables and trees. Jefferson always encouraged farmers to learn more a__out agriculture through farm societies, education and sci__ntific tes__ing.

Abraham Lincoln created the Uni__ed States Department of Agriculture in 1862. Lincoln signed a law that grant__d each state 30,000 ac__es of public land for __ach senator and each representati__e of the states in Congress at that time. This law established land-grant colleg__s in each state to promote the study of science, classical studies, military tactics, ag__iculture and mechanic arts. Utah State University in Logan is Utah's land grant college.

Theodore Roosevelt spent two years ranching and hunting in the Dakota Territor__, which began his love with the Wil__ West. Roosevelt set aside 125 million acres of Western l__nd as national forests and signed the Pure Food and Drug Act in the __ear of 1906, which established the Food and Drug Administration, to ensure safer food and medicines.

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Activity Online Expedition

Find out more about the people who said this:

"It is not the style of clothes one wears, neither the kind of automobile one drives, nor the amount of money one has in the bank, that counts. These mean nothing. It is simply service that measures success." *George Washington Carver, educator and agricultural scientist, 1864(?)-1943.*

"Burn down our cities and leave our farms, and our cities will spring up again as if by magic; but burn down our farms and grass will grow in the streets of every city in the country." *William Jennings Bryan, lawyer, orator, three-time candidate for president, (1860-1925).*

Activity

Play Weather Harvest!

Follow the instructions on the game board to see if you can harvest a crop.

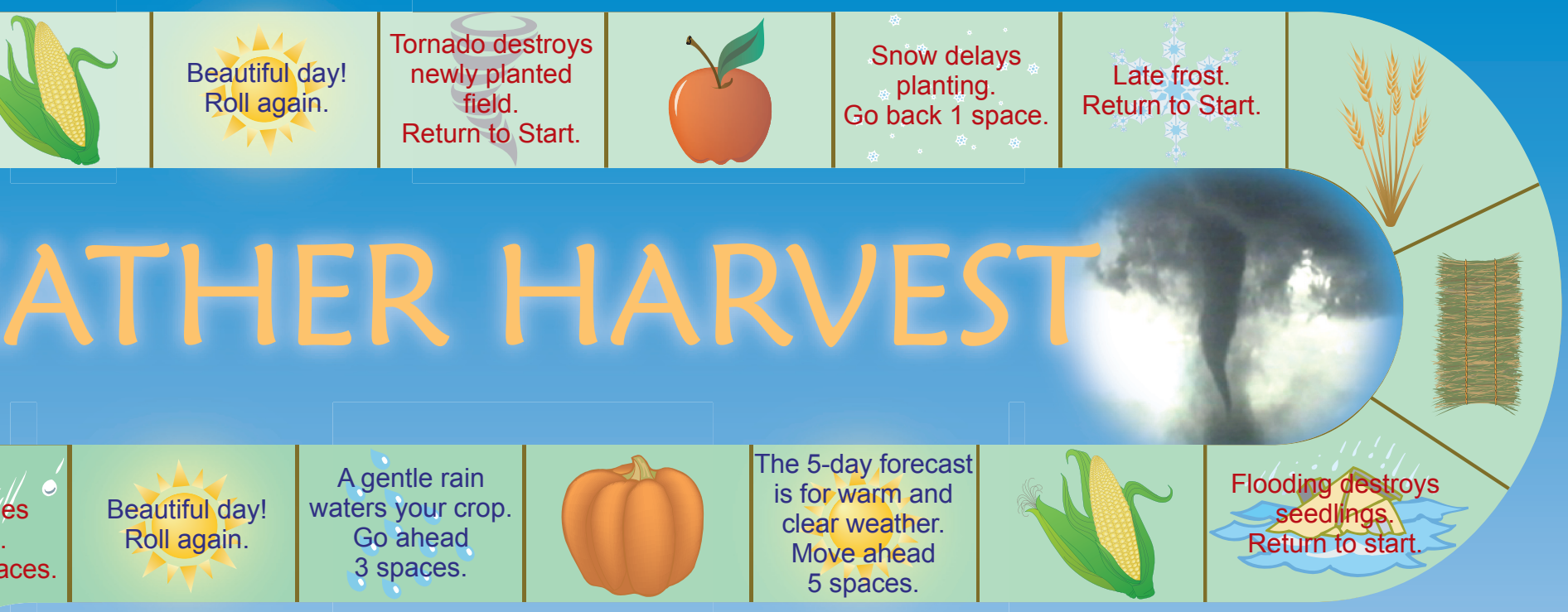
How many times did you experience a weather set back? What other risks are involved in farming or ranching? D-News weather activities? How can you use the weather info in the paper. What kind of weather info can you find in the D-News? Etc.

This winter's snow is next summer's ice cream

No, the ice cream is not made out of snow and snow is not made out of milk. But there is a relationship. Can you trace ice cream back tothe weather event called snow? Snow and rain, or precipitation, is very important to farmers and ranchers. A dry year can be a disaster for a producer of crops and livestock. These agricultural producers (farmers and ranchers) work with the four seasons and hope they will get the moisture they need to produce vegetables, fruits, grains, hay, milk, and meat.

Too much precipitation can also be troublesome to people who work on the land. Flooding destroys crops, causes soil loss or erosion, creates livestock health problems, and causes damage to buildings. Farmers and ranchers hope for the best when it comes to the weather and find ways to work with weather to grow crops and animals to produce the things we use everyday. What do you think the weather will be on your next birthday? How sure are you of your prediction? Farming and ranching is risky business. People can't control the weather, but we can learn about the seasons, weather patterns or the climate, and how nature helps people to produce the things we need from the land.

So how does snow this winter make next year's ice cream? This winter's snow becomes next year's water for irrigation, which waters crops, like hay. The hay is fed to dairy cows that then produce milk, which is made into ice cream. When you are on the slopes or just watching the snow fall this winter remember the water will be used for our food, clothing, and many other things; including ice cream! Precipitation Rain, snow or hail: all of which are formed by condensation of moisture in the atmosphere and fall to the ground.



Farmers work with nature.

Soil nutrients, planting, weed and insect control, machinery work, crop records, and harvest are things farmers can control and manage. Farmers cannot control the weather.

Crops may need to be planted more than once in the spring. Most crops are ready for harvest in late summer and fall, but may be wiped out by a single weather event. Play the weather harvest game to see if you will be able to bring in your crop.

on the game board and tape
pieces.
ing six small pieces of paper
om a cup.

How to play:

1. Each player puts a crop on START and takes turns rolling the die, moving the crop, and following the directions on each square. Some squares are crop images. Each kind of crop appears three times. If you land on the crop image that is your playing piece, roll again.
2. Keep playing until each player brings in his or her crop. You don't need an exact roll to bring in your harvest.
3. The first person to bring in his or her harvest wins.

Changes and Challenges: A Century of Utah Agriculture,,

Utah is not the best state for agriculture; good land and water are both scarce. Nevertheless, hundreds of small farming villages were founded throughout Utah after the arrival of the Mormon pioneers in 1847. Families in these villages farmed on small plots of land near their communities.

The land was dry and had to be irrigated for raising animals and crops. Farmers brought water to their land by digging ditches and canals with hand tools and horsepower. During the first decades of Utah settlement, each family and village worked to become self-sufficient, striving to grow and raise everything they needed to take care of themselves.

Statehood came to Utah in 1896 at a time of agricultural change. New irrigation canals were planned to bring more water to Utah's dry lands. Scientific methods for dry farming, where crops such as wheat and hay could be grown without irrigation, were being studied. These changes encouraged people to purchase more farmland. In just a few years, land ownership in Utah rose from 1.3 to over 4 million acres, the largest increase in the state's history. Once farmers owned more land, they began shifting from self-sufficiency farming to commercial agriculture.

By 1950, just one-third of Utahns lived in rural areas. The number of farms dropped to 25,800 as the number of people working in industry increased. The average farm size grew to 465 acres. The 1950s saw the complete mechanization of agriculture with tractors and other equipment. Advances in science brought higher production on each acre. New refrigerated railcars for carrying frozen foods coast-to-coast led to canneries relocating near large national growers in California. Utah's canneries began closing and many orchards and croplands were planted with hay or grain, or returned to pasture. Fertile land near Utah's cities was lost to increasing urban population and new housing developments.

In 1956, Congress passed the Central Utah Project, part of the Colorado River Storage Project, to enable Utah's share of Colorado River water to irrigate hundreds of thousands of acres of new and existing farmland and provide more water to Utah's cities and industry.

By 1980, only 15 percent of Utahns lived in rural areas. The number of farms in Utah dropped to 13,500. Self-sufficiency to produce enough for the state's population ended, but not the desire of many Utah residents to practice their rural values and skills. Many Utahns today have family gardens, bottle and process their own food, or purchase food for storage, thus keeping on the Utah tradition of preparedness and self-sufficiency.

How will Utah agriculture be different in the new millennium? What will rural communities look like, how will the changes affect our local and state economies, our land and water use and our values?

For more information (or lesson plans) about the history of Utah agriculture or if you would like to obtain a copy of the multimedia CD, Changes and Challenges: A Century of Utah Agriculture, contact Utah Agriculture in the Classroom, **www.agclassroom.org/ut**. The CD focuses on the settlement of Utah, the self-sufficient nature of the state's people and the future of Utah agriculture and agricultural land. As students learn about U.S. and Utah historical events, they also learn about what the people of Utah are doing to sustain themselves, how they make their living, establish their communities and, as science innovations evolve from research and education, how these events change their lives.

Activity

What percent of disposable income per household is spent on food in the United States? Look through the Help Wanted portion of the classified ads in the Deseret Morning News and locate a job that lists a salary. (If the job listed indicates an hourly wage, you will need to calculate that wage per hour into a yearly salary.) What is the salary for that job? If that became your job, and you, as a U.S. citizen spent 10 percent of your household income on food, how much would you be spending?

Activity

You do the math...

If each restaurant uses 10 gallons of soybean oil in its fryer each week, and it takes 18 gallons, by volume, of soybeans to make one gallon of oil, how many gallons of soybeans will be needed by the restaurants in your town each year?

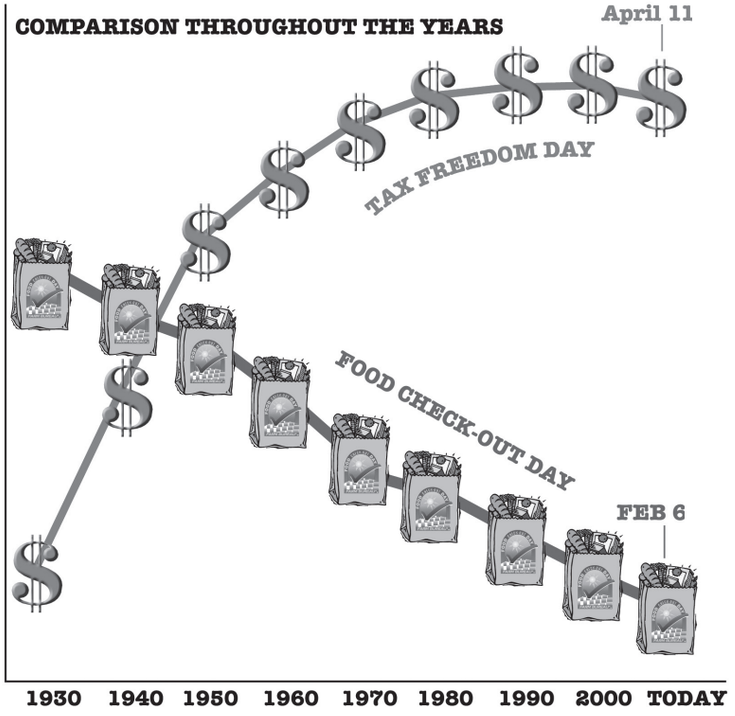
A typical dairy cow weighs 1,400 pounds and produces 61 pounds of milk per day. If one cow produces 3 pounds of butter or 7 gallons of milk or 6 pounds of cheese each day, how many pounds of butter, or how many gallons of milk, or how many pounds of cheese will a herd of 300 cows produce in a day?

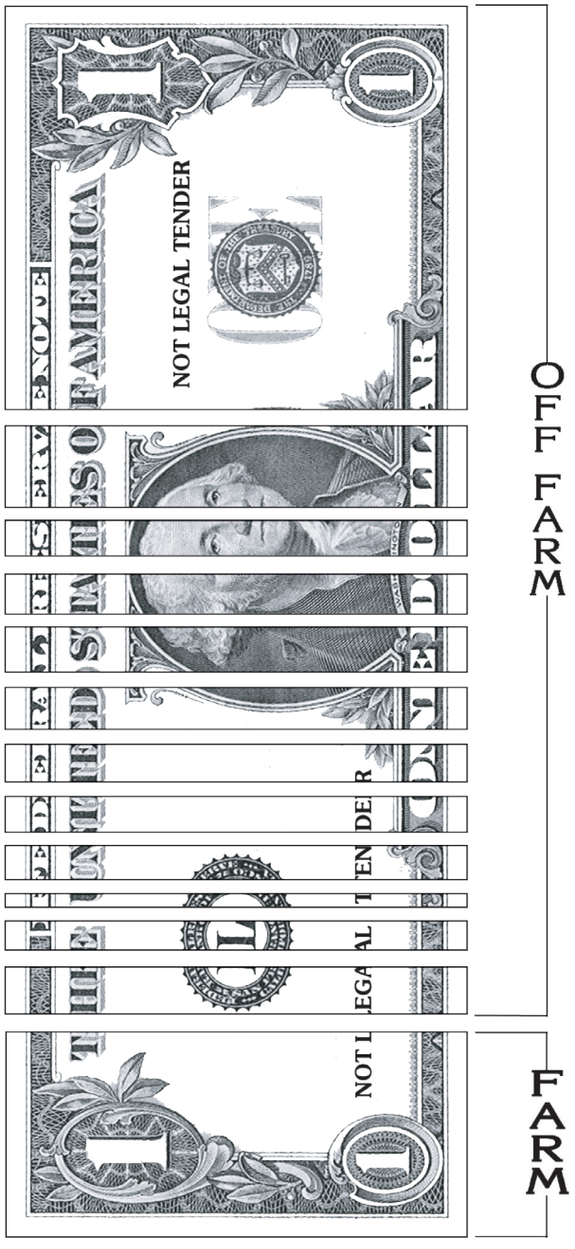
Where is food most affordable?

What really counts....

Food is most affordable in the United States. Not only do Americans have a safe, abundant, inexpensive food supply, we only spend 10 percent of our income on food. However, on average, if we took what a household earns in a year, and we wanted to pay for everything up front at the beginning of the year, we would pay for our groceries by February 6, but we are working until April 11 to pay our taxes.

The 2002 Census of Agriculture uncovered some interesting numbers, ones that really count and are "food for thought." As you look at the graphs try to interpret what the numbers would mean to you if you were a producer (farmer or rancher) or someone whose job depended on whether or not the corn crop was harvested or if healthy calves are born this year. What do the numbers mean to you as a consumer?





Where does your food dollar go?

OFF-FARM ...
costs (marketing expenses associated with processing, wholesaling, distributing and retailing of food products) account for **8¢** of every dollar spent on food.

FARMERS & RANCHERS...
receive only **19¢** out of every dollar spent on food that is eaten at home and away from home. In 1980, farmers received **31¢** out of every dollar spent on food in America.

FARM COSTS...
are the costs that farmers pay out of the **19¢** that they receive. Costs include: veterinary services, insurance, feed, fertilizer, seeds, crop-protecting chemicals, repairs, construction, livestock, interest, taxes, rent, machinery, fuel and other supply expenses — leaving the average farmer with **2¢** out of each food dollar.

Working With Nature

How long have we been working with nature?

Most scientist agree that people have been living on the earth for at least 200,000 years, but it is only in the past 10,000 years that we have discovered how to produce food for ourselves by farming. From earliest times, people have fed themselves by hunting animals and gathering fruits, nuts and vegetables growing in the wild. People moved large distances to follow their food source. Eventually, people began to use a new way of making sure they had enough to eat. They started growing plants near their homes, instead of leaving to go search for food. They started to keep animals, eating them when they wanted to instead of having to hunt them. They started to farm.

Learning to farm was a complicated process. People had to learn the best way to dig the earth, plant seeds, harvest the crops and store their food. This called for knowledge of the different seasons, weather patterns, good soils, watering, when to plant, when to harvest and how much seed to save for next year's crop.

Farmers of today, like the farmers of the past, need to work with the cycles of nature, care for the land, air and water and provide us with food, clothes and hundreds of other things we use every day.

Today, you awaken in the morning on sheets made mostly of cotton, perhaps a blanket made of wool, or a comforter made of cotton or down (goose feathers). The wallpaper pasted on the wall adheres because a farmer grew wheat. The paint on the wall is made from soybean oil. When you get out of bed, you may put your feet onto wood from a tree farm or a linoleum floor made from soybeans. The soap you use in the shower might contain cottonseed oil or lanolin, a kind of oil from sheep wool. You dry yourself with a towel made from cotton, and get dressed. The shirt you've put on is made of cotton and so are your jeans. You might wear leather shoes (compliments of cattle) and cotton socks. You have already used a dozen agricultural products and you haven't even eaten.

Try to imagine a day without agriculture. Do you think you could survive? WOW, we really can't have an AG-LESS Day.

Activity

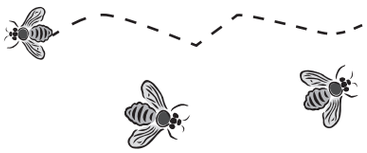
Look through the Deseret Morning News for pictures of agricultural products people use, such as the ones mentioned on this page (other than food to eat). Clip them out and paste them on a large poster-size piece of paper. How many did you find?

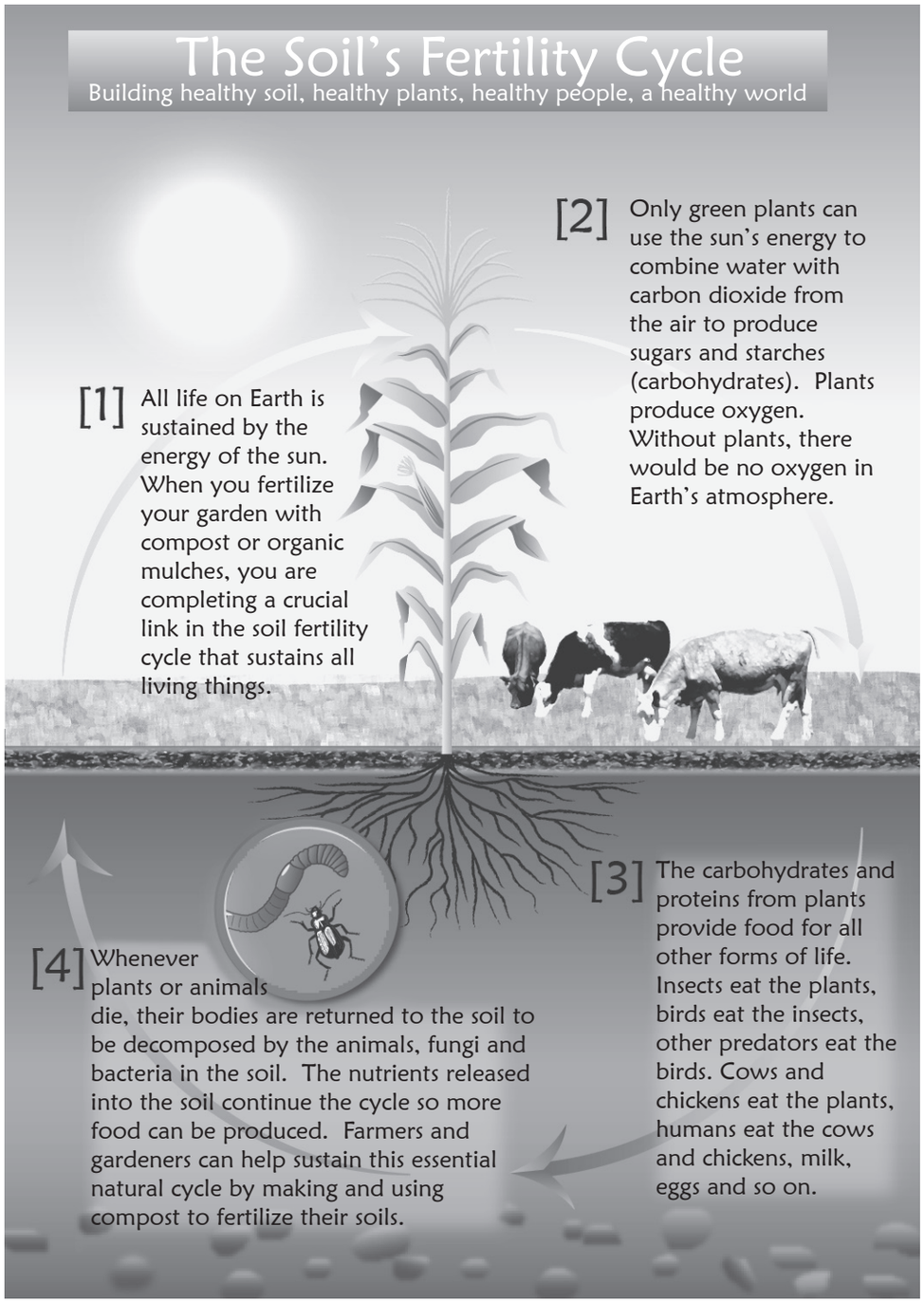
Read some of the letters from readers in the Readers' Forum of the Deseret Morning News featured in the A section of the newspaper. Now compose a letter of your own, explaining the value of agriculture in our lives and what you think should be done to help other people recognize that.

Cycles in Nature

Those who work with the land, farmers and ranchers, to produce food (yes burgers!), clothes and shelter, and many of the other things we use each day, are involved in agriculture. These producers use technology and science to work with the natural cycles and creatures of the earth. The water and fertility cycle are just two of the several important cycles farmers work with. Understanding seasons and how weather will influence crops and animals is also important.

The Soil's Fertility Cycle on the facing page explains how soil must be replenished by life on and in the soil to continue to provide us with food, clothing and shelter. Humans have used fertilizer for thousands of years — even though we have not always known why it was good for plants. Long before we understood plant nutrition, we noticed that animal droppings, wood ashes and certain minerals helped plants grow. During the late 1800s, scientists discovered that certain chemicals were essential for plant nutrition.

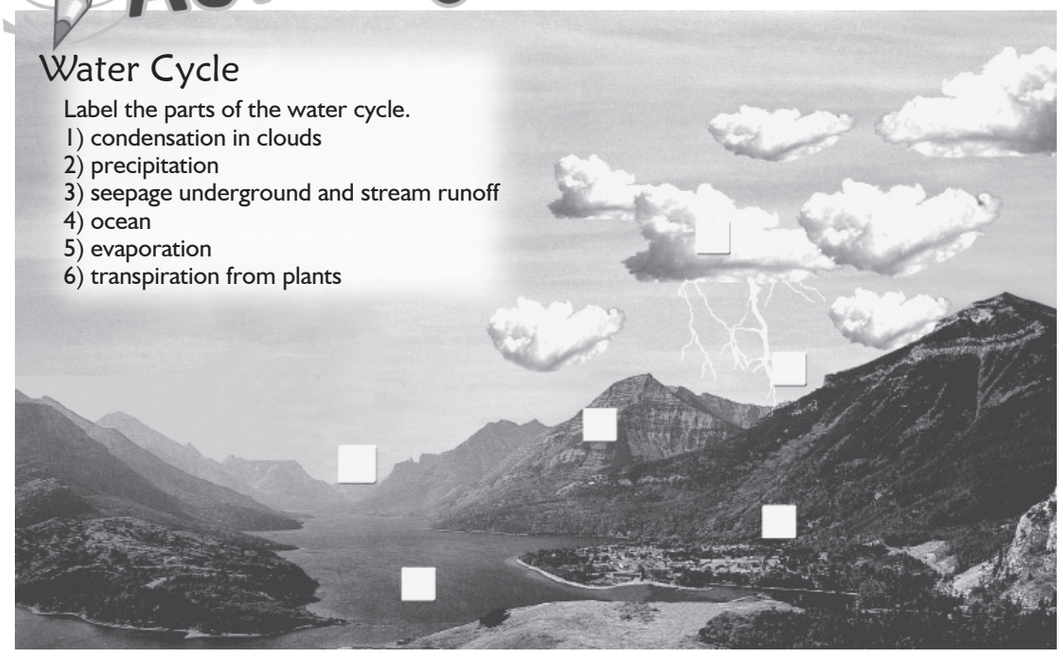




Activity

Water Cycle

Label the parts of the water cycle.
1) condensation in clouds
2) precipitation
3) seepage underground and stream runoff
4) ocean
5) evaporation
6) transpiration from plants



Activity

Using a piece of art paper, create your own copy of The Soil's Fertility Cycle. Use as many words and letters from the pages of the Deseret Morning News as you can, clipping and pasting them on your paper. Make the title of your page out of large headline letters in the newspaper. Write a brief description of each section: 1, 2, 3 and 4. Mount these papers on a classroom bulletin board or in a special place at your home.

Locate and mark all the graphs you can find in the Deseret Morning News. Then refer to the information on page eight of this publication. Use the countries and percentages listed on the grocery bag and create a bar graph of your own that shows the percent of disposable income per household for all the countries listed.

Renewable Agricultural Technologies Fueling America's Future

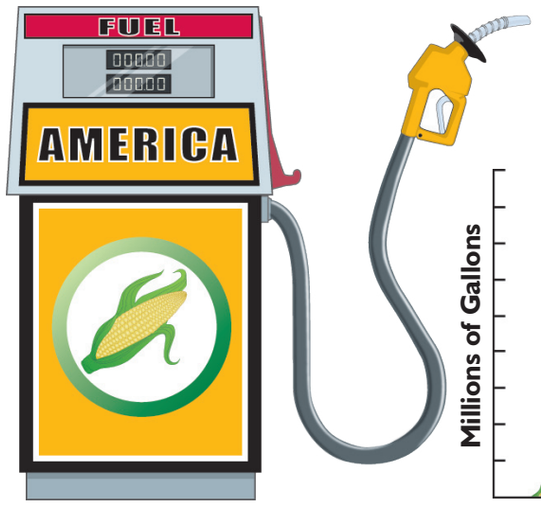
America's farm fields don't just produce fuel for our bodies. Crops such as corn and soybeans are used to produce fuel for our vehicles. Renewable fuels contribute to a cleaner environment, reduce pollution and reliance on foreign oil, and contribute to the stability of the rural farm economy by creating commercial markets for crops.

With record production of 2.81 billion gallons of ethanol in 2003, 1 billion bushels of corn were used to produce fuel for our vehicles. In 2003, 73 ethanol plants were in operation in the United States, with 14 new plants under construction.

Ethanol and biodiesel are just the beginning. Research continues to find new uses for agricultural commodities and wastes. For example, livestock manure is being used to create electricity. Commodities such as soybeans and canola are being developed as lubricants to replace petroleum-based products, and corn starch is replacing petroleum-based plastics. As American farmers, with the help of agricultural scientists, become more efficient and productive farm based fuels will become more and more cost effective.

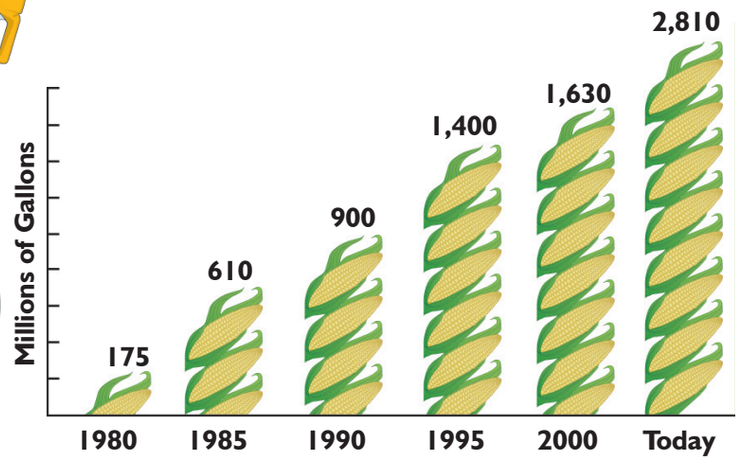
Learn more about bioenergy by visiting the U.S. Department of Energy Web site: **www.eere.energy.gov/biomass/for_students.html**.

Make your own biodiesel by visiting this Web site: **www.journeytoforever.org/biodiesel_make.html**



Historic U.S. Fuel Ethanol Production

One in every 10 rows of corn went into ethanol production in 2003



Activity

Make Your Own Bio-Plastic

1. Place a tablespoon of cornstarch in a plastic Ziploc bag.
2. Add two drops of corn oil to the cornstarch.
3. Add one tablespoon of water to the oil and cornstarch.
4. Mix the cornstarch, corn oil and water in the plastic bag by rubbing the outside of the bag with your fingers.
5. Add two drops of your favorite food coloring and mix again.
6. Immediately place the bag in a microwave oven on high for 20-25 seconds. DO NOT completely seal the bag.
7. CAREFULLY remove the bag; remember it's hot!

Observations

What do you notice about your biodegradable plastic?
Is your biodegradable plastic the same as the other students'?
What could you make with this biodegradable plastic?
(Remember it will dissolve eventually.)
What happens to your plastic?
Form your plastic into a ball (while it is still warm) and describe what it does.
Compare your biodegradable plastic with the plastic Ziploc bag.

Activity

After you have completed making your own bio-plastic as shown on this page, decide some of the things you could make with it. Draw a three-frame comic strip like one in the Deseret Morning News to show characters making and using this kind of bio-plastic. Ask your teacher, parent or caregiver if you can act out the comic strip (with friends, if needed) and have the "audience" try to guess what you made and how you might use it.

Search through the pages of the Deseret Morning News to locate any pictures of products that could be used with the bio-plastic talked about on this page. Clip and paste them on a poster-size piece of paper to share with others.

Utah Agriculture in the Classroom
Utah State University Extension

CREDITS

Information for this educational section was provided by Utah Agriculture in the Classroom: Debra Spielmaker, director; Rose Judd-Murray, project coordinator; and Yasuko Mitsuoka, graphic artist and Deseret Morning News: Sherry Madsen, Newspapers in Education special projects, and Lou Ann Heller, Deseret News art department. Additional assistance provided by Carolyn Dickson, NIE manager and Brenda K. Smith, NIE promotions coordinator.

RESOURCES

Utah Agriculture in the Classroom; Utah State University Extension; American Farm Bureau Federation "Farm Facts"; USDA Agriculture Research Service; USDA National Agricultural Statistics Service, 2001; 2003 Project Food, Land & People; National Biodiesel Board.

WEB SITES

www.agclassroom.org/ut
www.extension.usu.edu
www.uen.org
www.ars.usda.gov
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