

ACTIVITY: IN THE LAB!

Make Biodegradable Corn Plastic

1. Place a tablespoon of cornstarch in a paper cup or plastic bag.
2. Add two drops of corn oil to the cornstarch.
3. Add a tablespoon of water to the oil and cornstarch.
4. Stir the mixture.
5. Add two drops of your favorite food coloring to the mixture and stir well.

Scientific Observations...

1. What do you notice about your biodegradable plastic?
2. Is your biodegradable plastic the same as other students' plastic?
3. What could you make with this biodegradable plastic if you let it harden?

Microwave your biodegradable plastic for 20-25 seconds on high.

1. What happens to your plastic?
2. Form your plastic into a ball and describe what you see.

Make Corn Putty

Play with it like clay, then watch it become liquid again.

- 1 cup cornstarch
- 1/4 cup + 1 tablespoon water
- food coloring

Blend mixture with fork. It should flow when the bowl is tipped but feel solid when you touch it. If it's too thick, add a little water. If it's too runny add a little cornstarch.



This booklet was provided by the corn farmers of Kentucky. For more information about corn and corn grower programs, visit www.kycorn.org or call 800-326-0906. KyCGA - PO Box 90 - Eastwood, KY 40018

The Kentucky Corn Growers Association presents



CORN IS AMAZING!

When we hear the word "corn" we may see images of eating hot, buttered corn-on-the-cob or fields and fields of corn plants growing along the highways. But did you know that corn is around you everywhere? In fact, you are using corn right now. (The paper and ink used in making this booklet contain corn-based ingredients.) There are more than 3,500 ways to use this popular crop, and scientists are discovering even more ways to use corn every day. Read on to find out why corn is such an a"maize"ing grain.

CORNY HUMOR

What is worse than finding a worm in your corn?

Finding only half a worm.

Why did the corn get mad at the farmer?

Because he kept pulling its ears.



Say What?

MAIZE is the more correct term for the plant we know as corn in America. Its scientific name is *Zea mays*.

Corn is an important crop all over the world. How do you say CORN in...?

- Spanish - **maíz**
- French - **maïs**
- Chinese - **gǔ wù**
- Russian - **кукуруза (kookoorooza)**
- Swahili - **muhindi**

Corn is a SUPER PLANT!

Corn truly is an amazing plant. Scientists recently mapped out corn's genetic code and found that it has more genes than a human! Genes are the instructions that make living things look and behave the way they do.

roots	stalk
tassels	leaves
ear	silks

ACTIVITY:

Use the terms to the left to label the parts of the corn plant below.

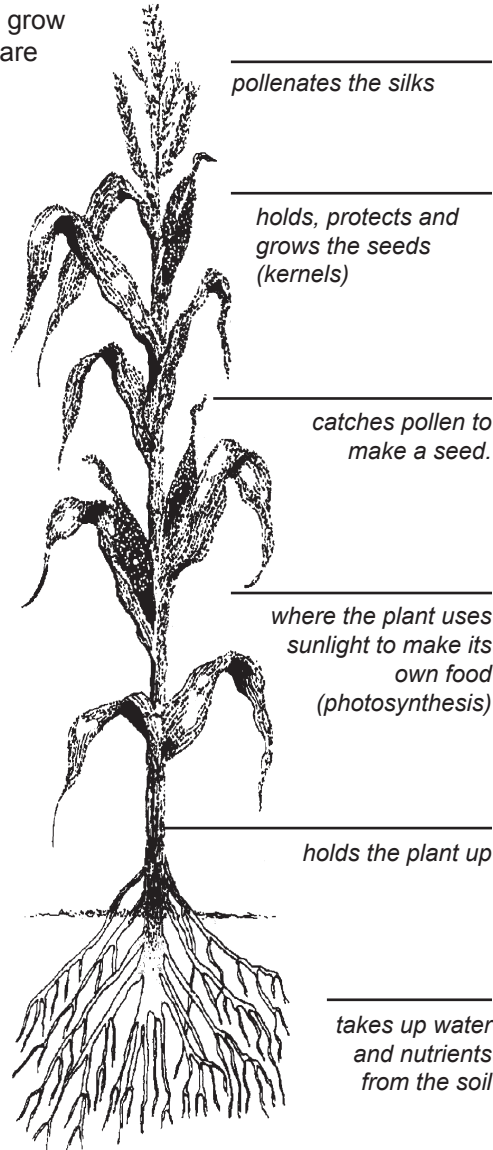
Fun Fact: Some corn plants can grow to be more than 20 feet tall, but most are between 6 and 12 feet tall.



Corn is Rooted in Our History

Since ancient times, corn has played an important role in human history. Corn is a grass native to the Americas and is thought to have been first grown in central Mexico 7,000 years ago. Corn was a staple of Native American diets and was used as tools, decorations, and in religious ceremonies. Many eastern American tribes shared their knowledge of corn production with the early settlers, which saved many of these pioneers from starvation.

Corn is now grown all over the world—on every continent except Antarctica. The United States produces more corn than any other country.



ACTIVITY: Find the list of items that contain corn in the word search below. Words can be left to right, top to bottom or diagonally.

- | | | | |
|-------------|-----------|----------|-------------|
| ACID | ETHANOL | KETCHUP | SOAP |
| ASPIRIN | FABRIC | LIPSTICK | SOFT DRINKS |
| BABY FOOD | FIREWORKS | LOTION | SORBITOL |
| BATTERIES | FLOUR | MAKE UP | SOUP |
| CEREAL | GLUE | PAINT | SYRUPS |
| CHEWING GUM | ICE CREAM | PAPER | TOOTH PASTE |
| CHOCOLATE | INK | PUDDING | VINEGAR |
| CRAYONS | JELLY | RUBBER | VITAMINS |
| DYES | JUICE | SNACKS | |

D O C A T E F T O O T H P A S T E A T M
M A H G V M A K E U P X U S Y X A R P E
I K E T C H U P Z T W Q D E R R C T A Y
U O W P A S D F G J H K D L U Z I X P C
V C I N K I B B N F M A I Q P W D Y E S
R H N E R C A S P I R I N T S Y U I R O
U O G L U E T N C R P A G O S D F D G V
B C G I H C T A J E K J E L L Y O L Z I
B O U P X R E C C W R V B N L O T I O N
E L M S M E R K Q O W E E R F L O U R E
R A T T Y A I S U R C R A Y O N S I O G
P T A I S M E D F K G H B L J J O K L A
Z E X C V C S B N S M A Q W E R U T Y R
U I O K F A B R I C B P A S O A P I S D
F S O F T D R I N K S G H P A I N T C J
K I V I T A M I N S O R B I T O L O X E

ACTIVITY:

How many of the items above do you have in your household or school? If farmers could no longer grow corn, are there things on the list you could live without? If some of the items could be made without corn, do you think they would be as good? Do you think the items would cost more or less than they do now?

Corn: A Valuable, Renewable Resource

Corn can be used in thousands of different products that we use every day which makes the crop very valuable to our country. It feeds the animals we raise for meat, it feeds our people, and is now used to make fuel and many other products. It would be difficult for people to live without corn, so it's fortunate that U.S. farmers plant a new corn crop each spring. That is why it is called a "renewable resource."



Kentucky Corn

Kentucky farmers are growing more corn than ever—twice as much as they did 100 years ago on two-thirds less land. While Kentucky does not grow as much corn as some Midwestern states, the Commonwealth grows a good crop on the farmland it has available. When all states in the U.S. are ranked in order for producing corn, Kentucky comes in at number 14.

As long as it is not too cold and wet, Kentucky farmers plant field corn seed in early April and harvest the corn crop in early September. Most of the corn is fed to livestock such as poultry, cattle and hogs. Kentucky corn is also sold to food and beverage makers, is used to make fuel ethanol, or is shipped out of state where it could end up in another country on the other side of the world.

Activity:

Color in the following states on the map below: Iowa, Illinois, Nebraska, Indiana, Ohio, South Dakota, Minnesota, Wisconsin, Michigan, Missouri, Kansas. This area is called the "Corn Belt" because most of the corn is grown there. Is Kentucky close to this area on a map? Think about the landscape of Kentucky. Do you think the western half or the eastern half grows the most corn?



Ethanol

Amazing Fuel

Today, one American farmer feeds over 155 people across the world.

Ethanol is a fuel that can be made from corn. In fact about one third of the corn crop goes toward ethanol production. Ethanol has less impact on our environment than gasoline, is renewable, and is made in the U.S. This fuel can be added to gasoline in order to reduce the harmful gases that come from a car's tailpipe. It also reduces the amount of oil we purchase from other countries. More fuel stations than ever are providing ethanol for customers to buy.

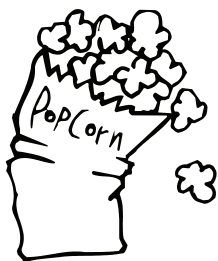


TYPES OF CORN



Sweet Corn is the type of corn people grow in their vegetable gardens. Sweet corn is the corn-on-the-cob, canned, and frozen corn that people eat. Sweet corn can be grown year round in warm-weather climates. The ears are harvested before the seeds begin to harden.

Field Corn, also known as dent or feed corn, makes up more than 90% of the corn you see growing in the fields. It is hard on the outside and starchy on the inside. While most often considered a food for animals, it can be found in products you use everyday!



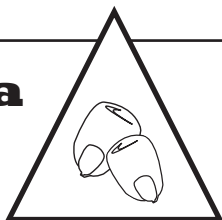
Popcorn is a special type of corn that retains water within the kernel. When the kernel is heated, the water also heats and builds up pressure. This pressure causes the kernel to turn inside out and then you have hot, fluffy popcorn!

FUN FACTS:

One ear of corn has about 16 rows and 800 kernels. The number of rows will always be an even number.

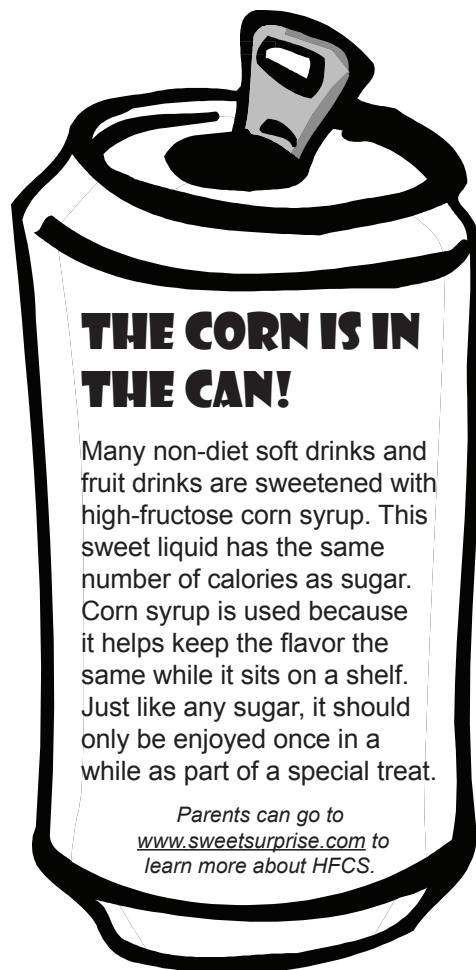
There is one silk for every kernel that grows in an ear of corn.

Is corn a Vegetable or a Grain?



Scientifically speaking, any plant is considered "vegetable." But if we were to put corn in the food guide pyramid, we would place it in the "grain" food category.

Why? — It is the kernels, or seeds, of the corn plant that are eaten, and these seeds are full of starch. The good part is that **corn is full of cancer-fighting antioxidants**, so this grain can be part of a nutritious, balanced diet.



THE CORN IS IN THE CAN!

Many non-diet soft drinks and fruit drinks are sweetened with high-fructose corn syrup. This sweet liquid has the same number of calories as sugar. Corn syrup is used because it helps keep the flavor the same while it sits on a shelf. Just like any sugar, it should only be enjoyed once in a while as part of a special treat.

Parents can go to www.sweetsurprise.com to learn more about HFCS.

Crazy about Cornbread

Try this corny recipe at home with an adult's help.

- 1 1/4 cups yellow or white cornmeal
- 3/4 cup sifted wheat flour
- 2 1/2 tsp. baking powder
- 2 Tbsp. sugar
- 3 Tbsp. melted butter
- 3/4 tsp. salt
- 1 egg
- 1 cup milk

Preheat oven to 425 degrees. Grease 9" x 9" pan with spray oil and place it in the oven until sizzling hot. Sift together flour, baking powder, sugar, and salt. Add the cornmeal. In a separate bowl, beat egg. Then add butter and milk. Combine all ingredients with a few rapid strokes. Place the batter in a hot pan and bake 20-25 minutes. Serve immediately.

What's in a Bushel?

While whole corn can be fed to livestock or ground to be used in human food, a corn kernel has several important parts that can be used in all types of products. Those parts are **starch**, **oil**, and **gluten** and can be separated at a mill. One bushel of corn (56 pounds of corn kernels) provides about 30 pounds of starch that can be used by itself or made into sweetener, fuel ethanol (2.8 gallons) or corn-based plastics. What is left is one and a half pounds of corn oil and high-protein feeds that can be fed to animals. Talk about getting the most out of a crop!

Say What?

- When someone says something is "**CORNY**," they mean it is dull and lacks originality. This word is often used to describe bad jokes.
- Speaking of bad jokes...
- **How is an ear of corn like an army?**
- *It has lots of kernels.*