

The Wonders of Corn

By Yvonne Marty

Suggested grade level(s)

4th and 5th Grade

Time

1 hour class time needed per section

Objective(s)

- Help students understand the history, science and dependence we have on corn, along with the importance of farming.
- To spark an interest in Ag. research, fact & careers, and the pure fun of learning about Agriculture around us everyday through corn.

Materials

- * Magazine pictures of products or actual items that all have been manufactured from corn.
- * Hand outs included in lesson plan

Terms to Define

Listed on Crossword

www.kycorn.org/kycgprojects/education/corninclassroom/1crossword.pdf

Introduction:

After looking at the many ways in which our nation uses corn, I was amazed at its versatility, and the “wow” factor of how different its products were. The purpose of this lesson plan is to allow the students to get a quick look at the amazing corn plant, the resources it has, and then focus on the great dependence we have on its continued production. To ask themselves, “What would our world, our nation, or our state do if corn was no longer grown?” “How vital is the role agriculture plays in the world?” The business of agriculture is the most important industry in the world since it puts food in our bellies, clothes on our backs, and fuel in our gas tanks. This discussion could then lead into activities and lessons into history, social, economic, and environmental importance.

Background for Teachers

Corn has become a popular conversation item as we move into the Ethanol production age. The United States is the leading producer of corn in the world, and corn has played a very important part in the history and culture of this country. Corn is used in more than 3,700 products to date, and scientists are trying to find even more uses for this versatile, renewable resource that will make our lives better and our environment cleaner.

Teacher Preparation

To start off the interest of corn, have at least 30 different pictures cut out that are products of corn. Pass these out and then ask each student one at a time to raise their hand and explain if their picture is actually a product of corn. You may also do this with a stack of different corn product sitting on your desk. Then hand out the list of corn made products. Found here:

www.kycorn.org/kycgprojects/education/corninclassroom/8uses.pdf

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Books About Corn

- ∞ [Corn Is Maize](#)
- ∞ [From Kernel to Corncob](#)
- ∞ [Gimme Cracked Corn and I Will Share](#)
- ∞ [Raccoons and Ripe Corn](#)

Additional Educational Resources

- ∞ [The Great Corn Adventure](#) - Interactive Web Site for Kids
- ∞ [NCGA World of Corn](#) - This is a comprehensive publication detailing production statistics and markets of corn.
- ∞ [Agricultural Statistics Service](#) - Find out how much corn is grown in Kentucky, cost of production and which counties grow the most corn. This is a great tool for teaching math and reading charts.

Discuss the “wow” factor of the versatility of corn and the common everyday uses it has.

Introduction for students

Explain the Historical importance of corn to the beginning of the U.S. How it helped us survive in the winter. Then go over the Fact sheet below on website

Lesson on the History of Corn:

Corn is a kind of seed, like rice, that comes originally from a kind of wild grass that grows in Mexico called teosinte. It has lots of carbohydrates, but not as much protein as wheat or barley. Corn also has some vitamins, especially Vitamin B and Vitamin C. People first began to farm corn (instead of picking it wild) around 7,500 BC in Mexico. Gradually people bred the corn plants to have more and more corn - bigger ears, with more kernels, and easier to eat - and fewer leaves. By about 1 AD, the Pueblo people in North America also grew corn. Print out time sheet and fact sheet below and read and discuss the correct answers

www.kycorn.org/kycgaprojects/education/corninclassroom/3beginning.pdf
www.kycorn.org/kycgaprojects/education/corninclassroom/3timeline.pdf
www.kycorn.org/kycgaprojects/education/corninclassroom/3truefalse.pdf

Lesson on the Science of Corn:

1. **Fun Science Experiment:** Making your own Biodegradable plastic from corn. Directions:

www.biotechinstitute.org/resources/YWarticles/13.2/13.2.8.pdf

2. Go buy any package of corn seed and pass it out. Previous to that split a few in half to see the middle for better identification. Use magnifying glasses if needed. Then print out the work sheet below and identify parts:

www.kycorn.org/kycgaprojects/education/corninclassroom/1kernel.pdf

3. Grow corn in class, with wet paper towel stuffed in a clear jar or cup, shove the corn seeds on outside of container as to see growth, set near window for warmth, and keep towel moist,. Record data.

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Terms to Define

Pericarp
 Photosynthesis
 Root
 Kernel
 Tassel
 Pollination
 Germ
 Tip cap
 Corn Crib
 Bushel
 Ear

Discussion:

1. How are the uses of corn different today than in the 1800's?
 2. What uses of corn can you think of that are not produced yet in the United States?
 3. What the U.S. be like without corn production?
 4. How many times today did you use a by product of corn?
 5. Why can't corn be commercial produced in Alaska?
4. Rent the Modern Marvels DVD episode on corn.

Art activities that are fun and use products made from corn:

1-Make a corn husk doll

www.crayola.com/lesson-plans/detail/corn-husk-characters-lesson-plan/

2-Make a corn Necklace

You can purchase colored corn from most feed stores. To soften in order to stick needle through, soak for 24 hours. Use thicker thread, or fish line. Larger needles are needed. Make long enough to go over the students head. Allow to dry and then tie securely.

3-Fun with corn made noodles:

www.magicnoodles.com/

Lesson for Math with Corn

Teach them what a bushel is and why it is used for measuring corn. Then hand out the worksheet:

www.kycorn.org/kycgaprojects/education/corninclassroom/4problems.pdf

Can Corn be grown in Alaska?

Yes, it can, but it is a time consuming and tricky business. No where in Alaska is corn grown commercial because cost over steps the yield. Even though in Alaska, we have lots of summer's long hours of sunshine that produce our gigantic vegetables, our season length is severely limited by freezing temperatures in both spring and fall. Extending the season by just a few days allows plants to grow to maturity. Corn will only grow if the temperature is above about 50°F (10°C) and can't go beyond the high 80s.

References

www.gi.alaska.edu/ScienceForum/ASF4/412.html

www.gi.alaska.edu/ScienceForum/ASF11/1166.html

<http://snras.blogspot.com/2009/07/who-says-you-cant-grow-corn-in-alaska.html>

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Grade Level Standards

Math M4.2.1-2.5

Science SF 1.1-3.1
SG1.1-4.1

Believe it or not, corn can be produced in Alaska's northern regions faster and with more regularity than in the famous Mat-Su Valley. Only 1 in 3 years does corn mature in Palmer, compared to every year in Fairbanks and better yet in Fort Yukon.

Growers must cover the ground with black polyethylene sheeting and drip line to retain heat and soil moisture. Warm soil helps increase uptake of the nutrients through the plant roots, allowing faster maturity and the ears to be developed.

Keeping the soil watered and high nitrogen fed besides selecting the correct seeds are also important. Some farmer's plant peas in-between the corn rows to add even more hydrogen to the soil.

Thanks to genetic engineering, someday Alaska may produce significant corn crops. In 1990, Dr. Fawzy Georges of Canada decided to convert the AFP (antifreeze protein gene) from an arctic flounder and inserted it into black sweet corn to keep the corn from freezing.

Though the study did not produce freeze-resistant corn, it did prove that plants can produce antifreeze proteins. That's a first step in producing plants that can expand the limits of the far northern growing season.

Active Corn Game

You will need two pieces of corn on the cob. Indian corn, if you can find it, is always fun and brightens up the game. If not regular corn works just as well as long as it's on the cob.

Divide the children up into two equal teams. If you have an odd number of children make one the game watcher. It will be up to them to make sure the game is played correctly.

Lay a cob of corn in front of the first person in each team. Now the fun begins. Each team member must pass the corn to the next team member. No it's not that easy.

The trick is they can't use their hands. If the corn is touched by someone's hand or if it is dropped, then it goes back to the beginning and the team must start all over again.

This is where the watcher needs to pay attention because it is their job to make sure no one uses their hands and that the corn gets back to the beginning if necessary. The first team to make it all the way to the last member wins the game.

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Other related AITC Lessons on corn

www.ontariocorn.org/classroom/citc_main.html

www.hummingbireded.com/corn.html

www.k McGrains.com/corn/edu.html

www.schools.utah.gov/curr/.../lessons/AIHLessons/.../4thGradeCorn.pdf

www.infarmbureau.org/Programs.aspx?id=2278

Yvonne Marty is an educator in the Palmer area.



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