

Corn in the Classroom – Many Uses

Course:	Corn in the Classroom
Unit:	Did You Know?
Competency:	Identify various uses for corn
Lesson Title:	Many Uses of Corn
Estimated Time:	60 minutes
Terminal Performance Objective:	
Identify the 5 major uses for corn.	
Enabling Objectives:	
<ul style="list-style-type: none"> - Identify the 5 major consumers of corn - Identify various uses within the 5 major consumer groups - Explore the uses of corn through “Make Your Own Corn Plastic” experiment 	
Materials, Supplies, Equipment, References and Other Resources:	
<ul style="list-style-type: none"> - PowerPoint - Corn in the Classroom Activity Book pages 6, 7, and 8 - “Finding Corn in Your Home” activity sheet - “Make Your Own Corn Plastic” activity sheet <ul style="list-style-type: none"> o Corn oil, corn starch, water, small plastic cups, sturdy plastic spoons, food coloring (optional), 2 liquid droppers - Various household items made with corn (if desired: i.e. diapers, ketchup, cereal, clothes detergent, chocolate syrup, etc.) 	

Interest Approach (Motivation):	
Place various items containing corn on display. (e.g. diapers, ketchup, cereal, clothes detergent, chocolate syrup, etc.).	
Question: Which of the items do you think contain corn?	
Answer: <i>Actually, all of these items are made with corn and today we are going to discover even more items that include the nation’s top crop.</i>	
Inform: <i>However, these items are not made with the sweet corn we all like to eat, but with field corn (show on PowerPoint slide 4 or with Sweet vs. Field Poster.) Today we are going to learn about the many uses for field corn and how it affects us daily.</i>	
Communicate Objectives, Define Problem or Decision to be Made <u>or</u> Identify Questions to Investigate:	
<ul style="list-style-type: none"> - Review the difference between sweet corn and field corn - Define the 5 major uses of field corn - Identify various uses for corn within 5 major consumption categories - Identify items that contain corn - Make our own ‘corn plastic’ 	

Instructor Directions/Materials:	Content Outline, Instructional Procedures, and/or Key Questions:
PowerPoint	<ul style="list-style-type: none"> - Review: sweet corn vs. field corn (slides 2, 4) (Activity book page 5) <ul style="list-style-type: none"> o Sweet corn (corn on the cob, canned corn, frozen corn) makes up only 1% of the corn we grow in the U.S. o The most abundant type of corn grown in the United States is actually field, or dent, corn. <ul style="list-style-type: none"> ▪ Almost all of the corn you see in farm fields (99%) is dent corn. ▪ Unlike sweet corn, dent corn has a hard outer portion about the thickness of your fingernail. The inner

Instructor Directions/Materials:	Content Outline, Instructional Procedures, and/or Key Questions:
	<p style="text-align: center;">portion of the corn kernel is soft and floury.</p>
PowerPoint	<ul style="list-style-type: none"> - Identify the 5 major categories of corn consumption (Slide 9) <ul style="list-style-type: none"> o <i>Begin by asking students what they think the biggest use of corn is. (Possibly list on blackboard/Smartboard)</i> o 5 major areas of corn consumption are... o <i>Leading statement: Although we don't want to eat plain field corn, there might be something that does.</i> <ul style="list-style-type: none"> ▪ Livestock feed - 40% <ul style="list-style-type: none"> • More than 40% of the corn grown in the U.S. goes to feed livestock (pigs, cows, chickens and even fish!) o <i>Leading statement: Parts of the corn kernels can be made into liquids that we use daily.</i> <ul style="list-style-type: none"> ▪ Ethanol - 29% <ul style="list-style-type: none"> • Did you know that you put corn in your cars? Corn is turned into ethanol (an alternative to gasoline) so when mom/dad/brother/sister fill up; they are putting a corn product in their gas tank! • It also has uses inside our homes (hairspray). o <i>Leading statement: Because the U.S. grows so much corn, we can't use it all.</i> <ul style="list-style-type: none"> ▪ Export - 11% <ul style="list-style-type: none"> • We send corn to other countries to feed their livestock and people. o <i>Leading statement: Though we wouldn't enjoy eating field corn off the cob, we still eat it everyday in other forms.</i> <ul style="list-style-type: none"> ▪ Corn Syrup - <4% <ul style="list-style-type: none"> • Sweetener found in many foods • Other Sweeteners -2.1% ▪ Cereal/Other – 1.6% <ul style="list-style-type: none"> • Foods that contain corn, such as corn flakes, fall into this category. Other uses for corn include clothing, cleaners and even diapers!
<p>PowerPoint: Many Uses of Corn</p> <ul style="list-style-type: none"> - Identify various uses within the 5 major consumer groups (show how corn effects student's every day lives) - Explore the uses of corn through "Making your own" experiment 	<ul style="list-style-type: none"> o Livestock feed (slide 10) <ul style="list-style-type: none"> ▪ Cows, chickens, pigs, fish <ul style="list-style-type: none"> • Question: How does this affect our lives? • Answer: Many of us enjoy eating hamburgers, hot dogs, ham, bacon, eggs, fish, etc. o Ethanol (slide 11) <ul style="list-style-type: none"> ▪ Fuel ▪ Ethanol is an alcohol, so things with alcohol, such as hairspray and Febreeze contain corn! o Export (slide 12) <ul style="list-style-type: none"> ▪ Used to feed people ▪ Used to feed animals in other countries ▪ Leading U.S. corn export markets include: <ul style="list-style-type: none"> • Japan • Mexico

Instructor Directions/Materials:	Content Outline, Instructional Procedures, and/or Key Questions:
<p>Activity book pages 6,7,8</p> <p>Experiment: "Make Your Own Corn Plastic" Activity Sheet</p>	<ul style="list-style-type: none"> • China • Venezuela • Canada <ul style="list-style-type: none"> ○ Corn Syrup (slide 13) <ul style="list-style-type: none"> ▪ Many of our favorite foods contain corn in the form of High Fructose Corn Syrup (HFCS). From soda, to Poptarts, to marshmallows, many foods are sweetened with corn. Other items include ketchup, chocolate syrup and barbeque sauce. ▪ HFCS has the same nutritional value as sugar. ▪ Correlates with page 7 in the activity book. ○ Cereal/Other (slide 14) <ul style="list-style-type: none"> ▪ Food – Corn Flakes ▪ Corn starch – baby powder, diapers (very absorbent), sidewalk chalk (binding agent) ▪ Complete word search on page 8 of the activity book (or online) to see items are made with corn ▪ Plastic – corn is used to make many plastics, such as water bottles. These materials are better for the environment than regular plastics, made from a petroleum base. They are bio-degradable, which means they will decompose. By using plastic bottles made from corn we are doing our part to recycle and keep our earth clean! <ul style="list-style-type: none"> • Experiment: Today we are going to do an experiment and make our own corn plastic. (Follow instructions on "Make Your Own Corn Plastic" Activity Sheet)
<p>Finding Corn in Your Home (Activity sheet included in packet)</p>	<p>Homework: Using the information from today's lesson, find 15 items in your home which contain field corn.</p>
<p>Closure/Summary:</p>	<p>Corn is in many items – not just the kernels you eat. Have class name various uses for corn.</p>
<p>Evaluation:</p>	<p>Results from "Finding Corn in your Home."</p>