TEACHER'S GUIDE

Planting Seeds of Knowledge

with The MAiZE and Pioneer Hi-Bred International

- Have you ever wondered how much your class really knows about agriculture?
- Do your students think food is actually grown and manufactured at the grocery store?
- What is agriculture and why should it be addressed in the classroom?

The MAiZE, a human puzzle carved into several acres of cornstalks over your head, is dedicated to helping students learn more about agriculture by allowing them to experience it firsthand. As an activity designed to test the wit and skill of those daring to find their way out of the labyrinth, The MAiZE also offers a unique opportunity to educate about agriculture in a fun environment.

Last year, thousands of elementary students visited The MAiZE at it's various locations around the country. This year, The MAiZE is again focusing its efforts on teaching children—and adults for that matter—about the importance of agriculture in daily life. This teacher's guide and the enclosed activity sheet have been designed to help generate ideas for teaching about agriculture in the classroom, before exposing your students to the hands-on experience of The MAiZE. The lesson ideas and activities are centered around corn and agriculture in order to allow students to become familiar with the topics they will be "tested" on at The MAiZE. Students who visit us will be provided with an educational passport that—depending on how well the wandering maze-goer answers the educational questions it contains—will help guide them along the correct pathway. Enclosed is a sample.

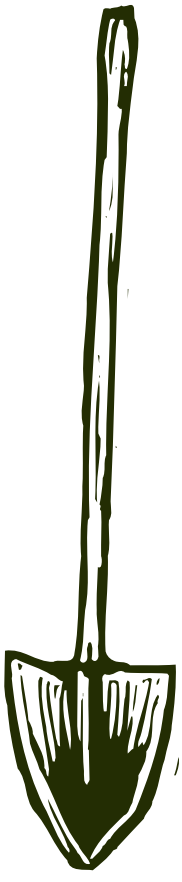
Please photocopy and utilize these materials in your classroom in any way you feel appropriate. Then, it is our hope that you and your class will visit us and take agriculture back out of the classroom and into the field!

The MAiZE™

Incorporate agriculture in everything!

CORN MAZE CONNECTION:

Agriculture is part of everyday living, although many children aren't aware of it. By incorporating agricultural principles in lessons of all varieties, your students will come to understand how vital ag really is! Then, after classroom lessons, bring your class to The MAiZE and let them see for themselves how agriculture is a fun, interesting and vital part of life.



Language Arts

- Cut hand holes on four sides of a small covered box. In it, place some wool fleece, corduroy, cotton washcloth, linen towel, cardboard square, cotton rug yarn, burlap material, short section of cotton or hemp rope, other handy materials. Students put their hands in the box, identify objects and write them down. They then try to identify the agricultural product each was made from.

- Using old magazines have children make agricultural collages by cutting out and pasting pictures of farming, food, fabrics, wood products, or flowers. Don't forget the inconspicuous things like paints, crayons, glues, and soaps.

- Write your own solution to the problem of bugs eating crops. Pretend you are a farmer, what would you do if bugs invaded your crops?

Social Studies and Economics

- How would family life be different if we had to produce all of our own food? Ask students to trace all the food they have eaten that day and all the people who have worked to get that food to them.

- Ask your students to look around the classroom and find things that have come from farm products. Examples: glue, paper, pencils, clothing, chalkboard erasers, books, rubber items, wood items, blind cords, drapes, flags, etc.

- Make flow charts of the processing steps involved in bringing a specific product (or your favorite food) from the farm to the table.

- Discuss how family chores and family life are different in the city than on a farm.

- Use farm crop to discuss the concepts of supply and demand.

Science

- Brainstorm a list of crops and animals the children have seen in their state. How do we use these products?

- Plant vegetable or other crop seeds, count the days to germination, and use other variables to find how the plants grow best.

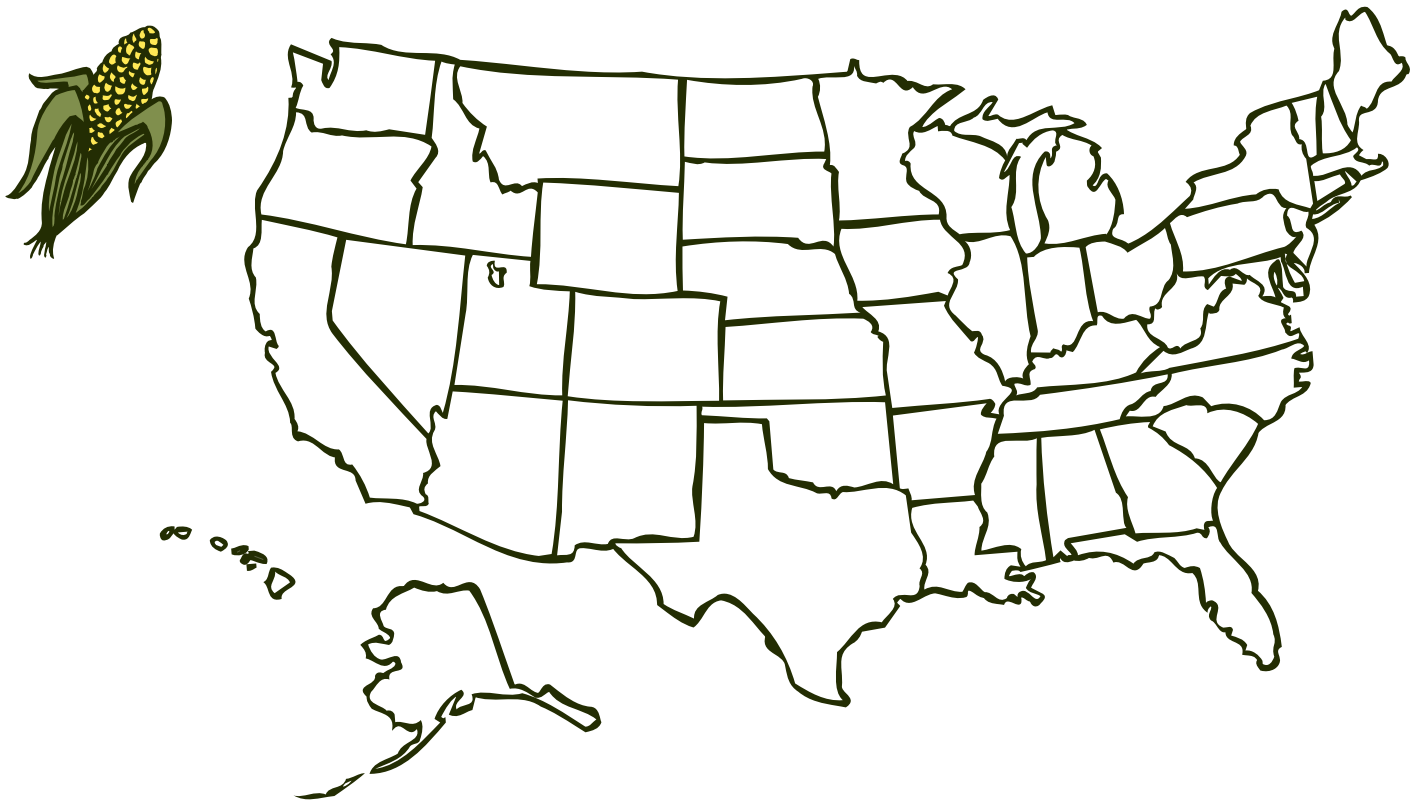
- Invite a farmer to speak about why topsoil and water are important to our food and how he or she protects these resources.

Experience is the best teacher of all.

CORN MAZE CONNECTION:
Education should be fun, and students want to learn about things they enjoy. What better way to help them enjoy agriculture than by giving them visual activities—including a hands-on experience weaving their way in and out of a cornfield maze.

Where in the United States did my food come from?

Where did your lunch come from? Some of the foods you eat every day are produced in your own state. Most states produce their own milk, eggs, fruits, vegetables, and grains. Some states produce so much of a particular crop or animal that they have become famous for their agricultural products. Color the small circle on the legend and then color a small circle on the map to match the legend of our most productive states in the United States. Do you see some regional patterns?



- ☐ Corn: Illinois, Iowa, Nebraska, Indiana, Minnesota, and Ohio
- ☐ Dairy products: Wisconsin, California, New York, Pennsylvania, and Minnesota
- ☐ Beef: Texas, Nebraska, Kansas, Colorado, Iowa, Oklahoma, and California
- ☐ Soybeans, major oil crop used in salad dressings and mayonnaise: Illinois, Iowa, Nebraska, Indiana, Minnesota, and Ohio
- ☐ Pork: Iowa, Illinois, Minnesota, Nebraska, Indiana, North Carolina, and Missouri
- ☐ Chickens: Arkansas, Georgia, Alabama, North Carolina, Mississippi, and Minnesota
- ☐ Wheat: North Dakota, Kansas, Montana, Oklahoma, Washington, and Minnesota
- ☐ Eggs: California, Georgia, Arkansas, Indiana, Pennsylvania, and Texas
- ☐ Potatoes: Idaho, Washington, California, North Dakota, Maine, and Wisconsin
- ☐ Tomatoes: Florida, California, Virginia, Ohio, Georgia, and Michigan

Where do I go?

CORN MAZE CONNECTION:
Seeing is believing. The MAiZE offers the perfect chance for students to see, touch, and feel corn in an actual field. That's an eye-opening experience for those who have not grown up around agriculture.

Label the parts of the corn plant from the list below. Did you know a corn plant has so much to it?

ear or cob: protected by a husk of tightly wrapped leaves

kernels: the plant's seeds and the part you eat

roots: these go deep into the soil and take out the food and water the plant needs to grow

silk: long soft threads at the top of the corn plant

stalk: some kinds of corn have stalks as high as 31 feet

tassel: the flower at the top of the plant

Answers: tassel, stalk, ear or cob, kernels, silk, roots

Information was gathered with help from Utah's "Ag-in-the-Classroom" program. For more information contact www.ext.usu.edu/aitc

For additional information and activities available on corn and agriculture in general, check out these web sites:

www.ilcorn.org
www.mncorn.org
www.ncga.com
www.agriculture.com/contents/FFA/programs/food
www.ohiocorn.org/kids

- Cut a potato into three equal parts. Pass around one section for everyone in the class to touch; have only one student touch the second section; and do not touch the exposed area on the last piece. Label three ziploc bags for each section, put the potato piece in each bag and place the bag in a warm spot. Note the bacterial growth in 3-4 days. For a variation on the second piece, ask everyone to touch the potato after they have washed their hands.

- Identify the plant parts we eat.

- Discuss the importance of soil, water, and agricultural land as a natural resource.

Health and Nutrition

- Survey school lunches every day for a week. Record how many servings of grain products, dairy, meat, fruit and vegetables, and "sweet/fat" products are eaten in one week. Make a chart to show how many times each product was served, then check to see if what was served matched the food pyramid.

- Have students plan a nutritionally-balanced daily menu.

- Experiment with different foods to find out what will happen to them if not stored properly. Discuss the importance of proper food handling and storage.

- Research foods that come from other countries around the world. What different foods are eaten at home because of family background?

Let your students see agriculture in the process!

Sprouting Seeds in a Glove

MATERIALS

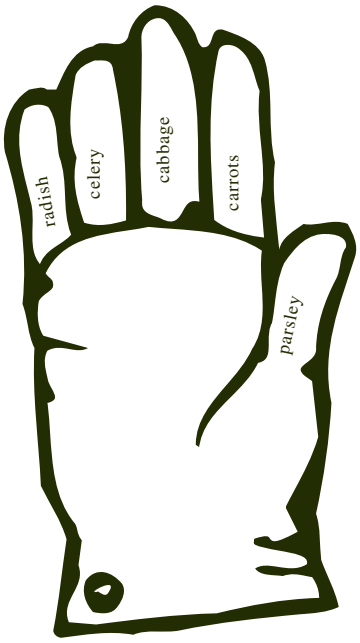
- Food handlers glove (available at restaurant supply store or your school cafeteria)
- Five different small seeds (note example)
- Five cotton balls (one for each finger)
- Water
- Permanent marker, pen, or grease pencil
- 6 small bowls or cup saucers, 5 for the seeds and 1 for the water

CORN MAZE CONNECTION:

The best way to learn something is to experience it. By letting your students see the growing process, their interest in agriculture will be piqued. Then, come show them the mature corn at The MAiZE and help them see the final product of seeds planted just like those in this activity!

PROCEDURES

Begin by writing the name of a different seed on each finger and thumb of the glove. Next, quickly dip a cotton ball into some water; saturation is not necessary. While you have the moist cotton ball in your hand, dip it into the container of one of the seeds you are going to sprout. Less than a dozen seeds works best, so use a light touch. Place the cotton ball, seed and all, into the correctly labeled finger. Do the same for each of the five seeds. Secure the opening with tape or a paper clip. You should see sprouts within a week. There is no need to water, the cotton ball contains enough water to germinate the seeds. Seeds will even sprout in the dark. Most seeds will sprout within a week. Some may even be transplanted (transplant the entire cotton ball with the seeds into the pot of soil). Do not use large seeds like corn or beans, the cotton will only have enough water to enlarge these seeds, not germinate them.

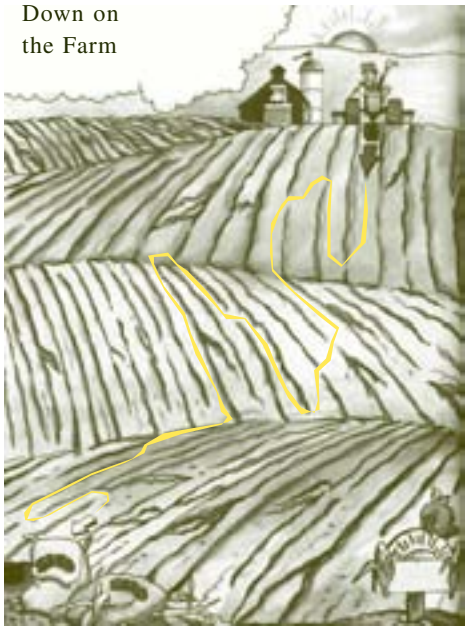


Answers for the Activity Sheet

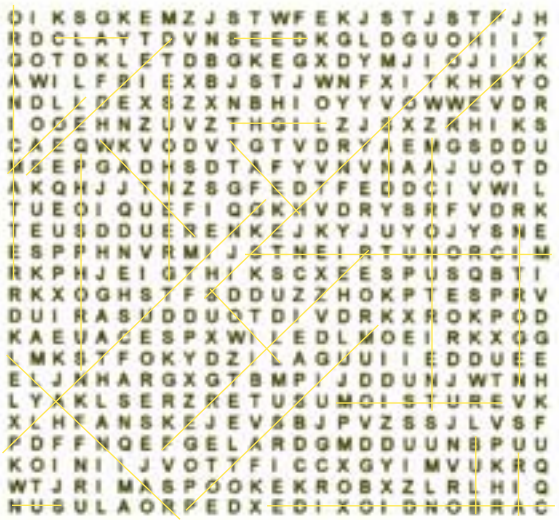
Corn Calculations

1. $9,820
2. $24,000
3. $13,257
4. 71; $4,419.75
5. $40,262
6. $58,920
7. $182,911.95
8. $73,650
9. $191,490
10. $8,578.05

Down on the Farm



Step 2 GIVE IT FOOD



Corn Word Scramble

corn flakes
ice cream
soda
peanut butter
ketchup
salad dressing
jelly
marshmallows
margarine
taco chips

How well do you know your corn?

E, C, H, D, G, A, B, F

Careers in Agriculture

G, I, J, B, K, D, C, H, L, M, A, E, F

Step 4 HARVEST IT

Cotton	Fiber Crop	China
Cacao	Beverage Crop	Cote d'Ivoire
Corn	Cereal Crop	United States
Sugar Beets	Sugar Crop	U.S.S.R.
Dry Beans	Pulse Crop	India
Banana	Starch Crop	Brazil
Coconut	Oil Crop	Indonesia

Step 5 PROCESS IT

Starches	Syrups	Dextrose