Growing Corn - Lesson Plan

Background Notes

Corn is a plant native to North and South America. Native Americans grew many varieties of corn, including sweet corn, popcorn and corn for grinding into meal thousands of years before European explorers first arrived. In the seventeenth century, corn was introduced to European farmers. Most of the corn grown in the United States since the early nineteenth century has been used to feed animals.

Many nineteenth-century farmers kept handwritten diaries of their farming activities: planting, raising and harvesting crops and weather patterns. Today’s farmers often keep track of their crops on a computer. Historians and scientists use diary and computer print-outs to study farming practices and trends over time.

In 1884, Charles Estep kept a farm diary. He lived on Musgrove highway on what was later the Fred Bulling Farm in Sebewa Township, Ionia County. You can read excerpts from his farm diary in which he writes about growing corn, oats and wheat.

Growing corn in your classroom can be both a history lesson and a science project for your students.

Objectives

- Students will formulate questions and hypotheses about how corn grows, such as how long it takes to grow its roots and shoots, whether it needs a sunny window or shady growing area, etc.
- Students will discuss the history of corn, which Native Americans grew.
- Students will demonstrate how they plant corn from a seed and describe the root and shoot patterns.
- Students will order the steps in growing plants.
- Students will maintain a diary of their corn planting questions, activities and results, then answer their questions.

Michigan Social Studies Curriculum Content Standards

The lesson presents an opportunity to address, in part, this standard:

- 5.2. INQUIRY: All students will conduct investigations by formulating a clear statement of a question, gathering and organizing information from a variety of sources, analyzing and interpreting information, formulating and testing hypotheses, reporting results both orally and in writing, and making use of appropriate technology.

Materials Needed

- A cob of ripe dry field corn or seeds from a feed and grain store or a wild bird seed store
- Clear glass or plastic jars with screw top lids
- Paper towels
Directions

Learn about corn. Read and discuss excerpts from Charles Estep's Farm Diary.

Print out the corn calendar and make enough copies so that each student can have one to keep track of the growth of the corn kernels. You may need to make several copies of the calendar to keep track of all the changes. Students should enter the date and a picture or words describing what is happening.

(Note: kernels from the ear of corn in this photograph were used in this experiment. Each stage of development was either photographed or scanned directly into the computer to document the different stages of growth for steps one through five.)

Step One:

1. Obtain a dry ear of field corn.
2. Remove several kernels from the ear by rubbing and turning the ear in your hands.

Step Two:

1. Prepare a clean canning jar with a top that you can screw on.
2. Fold a wet paper towel so that it stands in a ring around the inside of the jar.
3. Stuff more wet paper towels inside the ring.
4. Place the individual kernels of corn between the wet paper towel ring and the outside wall of the jar. Discuss: Which end of the kernel will roots come from? (The pointed end.) what will happen if you point that end up instead of down?
5. Screw on the cover of the jar and place it in a sunny window.
6. Turn jar one quarter turn each day so that each kernel will have sun. Or, do not turn the jars and observe the differences between kernels in the sun and those not in the sun.
Step Three:

1. WATCH CORN GROW!
2. Record the changes you see on your corn calendar each day! 19th century farmers often did this in their diary.
3. Think about:
   - How have the kernels changed?
   - How have the kernels stayed the same?
   - What do you think will happen next?
4. While the corn grows, look up old-time sayings like: "Corn planted in May will be knee high by the fourth of July."

Step Four:

1. Prepare the soil. The corn can be transplanted into a five gallon pail with a mixture of dirt, sand, and potting soil over a thin layer of small rocks. Fill the bucket to within 4 inches of the top.
2. Water regularly. When the corn has sprouted to the point that its stalk is 3 to 4 inches tall, transplant it (as shown in this photo—viewed from above). Water regularly. (In the real setting, farmers do not transplant the young corn stalks.)

Step Five:

When corn stalks reach 2 feet ("knee high") or more, transplant them to a garden.

Step Six:

When the stalks reach 7 to 8 feet in height, they will produce one to two ears of corn. It helps to have at least two stalks of corn to grow so that one can