



Science

CORN DISSECTION

Grade Level

2-8

Length of Lesson

30 minutes

Objective

Students will be able to identify the main parts of a corn kernel and explain the function of each part.

Materials Needed

- Soaked field corn kernels
- “Parts of a Corn Kernel” cards or another tool for carefully breaking apart kernels
- Paper towels
- Student worksheet
- Magnifying glasses or microscope

Standards

Common Core

CCSS.ELA-Literacy.RI.4.3; RI.5.3

NGSS

MS-LS1-1;
3-LS1-1;
5-PS1; MS-PS1

Lesson Summary

This lesson gives students a close-up look at a corn kernel. Students will dissect a softened field corn kernel and identify its different parts.

Lesson adapted from “It’s an Earful” DeKalb County Farm Bureau Agricultural Literacy Program.

Suggested Sequence of Events:

1. Set Up: Soak field corn kernels overnight in hot water with a few drops of dishwashing detergent so they will be soft enough for students to dissect.
2. Read through the IAITC Corn Ag Mag/Reader series at agintheclassroom.org.
3. Read “It’s Corn Picking Time” by Jill Esbaum
4. Complete the activity following the procedures:
 - Introduce the Corn Kernel: Give each student a softened corn kernel. Ask students to closely examine their kernel.
 - Observe the Outside: Have students hold the kernel point-down and identify the dent at the top. Explain that this is dent corn, or field corn, and the dent forms as the kernel dries.
 - Find the Tip Cap: Turn the kernel over to find the pointed tip cap, where the kernel attaches to the cob.
 - Find the Germ: Have students look for the lighter-colored oval on the side of the kernel. This is the germ, or embryo, which will grow into a new corn plant.
 - Expose the Black Layer: Using a “Parts of a kernel” card, carefully slice off the bottom part of the tip cap to look for the dark black layer. Explain that this indicates the kernel has reached maturity and is no longer taking in water or nutrients.
 - Remove the Pericarp: Peel away the thin outer pericarp, or seed coat. Hold it to the light to see that it is translucent. Explain that it protects the seed.
 - Split the Kernel: Carefully break the kernel in half and separate the germ from the rest of the kernel.
 - Explore the Endosperm: Examine the white, powdery endosperm. Explain that it makes up most of the kernel and provides food for the developing embryo.
 - Discuss & Reflect: Review the parts and their functions. Ask students to share one thing they discovered during the dissection.

TEACHER RESOURCES

Introduction activities to complete prior to the lesson:

- Pass around a covered box containing 4-6 corn-related items
 - Each student will look at the items, close the box, and pass it on.
 - Once everyone has had a chance to look, take the box back, but don't open it. Ask students to list the items they saw.
 - Take out the items and place them where they can all be seen. Ask what the items might have in common.
 - All these items represent ways corn is used.
- Show students the ears of field corn, popcorn, flint corn, and the photo of sweet corn (optional: accompany the sweet corn photo with a can of corn and/or bag of frozen corn).
 - Are all these ears of corn the same? (No, they are different types and have different uses.)
 - Of these four types of corn, which do you think farmers grow the most of? (Field corn)
 - More than 90% of the corn farmers grow in Illinois and the Midwest is field corn.
- Introduce the CONNECTIONS Magazine Cover Design Contest as a way for students to illustrate what they learned. Provide class time for students to plan and create their designs. Rules and entry forms can be found at www.GrowYoungMinds.org.

Discussion Points:

- Discuss corn: What is it, and why are we surrounded by it?
 - Corn is also known as maize.
 - It is a cereal grain, meaning it is produced by a grass plant.
 - Wheat, rice, and oats are also cereal grains. (Now you know why that stuff we eat at breakfast is called "cereal!")
 - Corn is a staple food for many people around the world.
- Review the parts of a corn plant.
 - stalk – The stem of a corn plant; also called a corn stalk.
 - tassel – The tassel grows from the top of the plant. It produces pollen.
 - roots and brace roots – The roots pull water and nutrients from the soil. Brace roots also help to support the stalk.
 - ear – The part of the plant that bears seeds (kernels).
 - silks – Hairlike strands that grow out the tip of each ear. A kernel forms on the ear for every silk on which pollen falls.

