Structurally Speaking (At Home)

Middle School

Introduction

In this activity students will explore the parts of a plant, specifically a corn plant. As students learn the names of different parts of the corn plant, they will also explore what the function of that part is.

Activity

Students will build a window sprout house to observe a seed germinating. Then they will compare their seed to a corn seed. Finally, students will dig deeper into the structure (parts) of a corn plant and what function (job) each part has in the survival of the plant.

Materials

- Plastic sandwich bag
- Seeds - grass seed from the yard, garden seeds, etc.
- Tape
- Paper
- Paper towel or three cotton balls
- Water
- Notebook paper
- Internet Access

Directions

1. Build a window sprout house
   - Gather plant seeds from your yard, nearby park, or your local store.
   - Dampen a ½ sheet paper towel with water, wring it out so it only damp.
   - Fold the paper towel in half, twice. Place the folded paper towel in the bottom of the plastic sandwich bag.
   - Place the seeds on the outside of the paper towel in the plastic sandwich bag.
   - Tape the bag in a window of your home, where the seeds can get sunlight.
   - If you'd like to make it look like a house, cut a roof out of paper and attach it to the top of the bag.
   - Watch your seeds sprout and record your observations for a week on notebook paper.

2. Watch the Kansas Corn STEM seed germination video.
   - Draw a Venn Diagram and compare your seeds growth to that of the corn seed growth in the video.

3. Watch the Kansas Corn STEM Parts of a Corn Plant video.
   - Record what each part of the corn plant is called on a piece of notebook paper, leaving room for function descriptions.

Teacher Note: The Kansas Corn STEM Part of a Corn Plant Quiz video is available on EdPuzzle with questions already developed.

Assignment

- Record what you think that each plant part does.
- Then read the Corn Plant Structures and Function Document and revise your function definitions. Do not erase your answers, simply cross out information that may belong to a different plant part. Add information from the information sheet to expand on your current function definitions.

Answer Key

Corn Plant Structures and Functions

- Tassel: the male part of the corn plant that contains the pollen. The tassel is on top of the corn plant.
- Leaf: a full-grown corn plant has 16-19 leaves although 5 leaves fall off by the time the plant tassels. The leaf provides the surface area where light is intercepted, and photosynthesis takes place.
- Silk: a hollow tube that comes from the female part (ovary) on the ear. The silk grows outside of the husk until the pollen lands on the silk and then moves down silk tube to fertilize the ovary to form the seed. Each ear has one silk strand for each kernel on the ear. Husk: leaf like structure that wraps around the ear for protection.
- Ear: the structure that contains the kernels that are forming after fertilization. The female part of the corn plant. Kernel: it is the corn seed with one main function; to make another corn plant. Node: a place on the stem where growth occurs. Leaves, roots, ears, and tassels form from nodes.
- Stalk: the main body (stem) of the corn plant. Stalks have to be sturdy to support the weight of the corn ears and provide pathways for the nutrients to move up and down the plant.
- Brace root: roots that form above ground one the sixth node (the first five nodes are below ground where other roots are formed) Grow from the node and then down to the soil and keep the plant standing upright.
- Roots: grow underground and bring water and nutrients to the rest of the plant.

Additional Resources

- Kansas Corn STEM Fourth Grade Lesson Plan, Structurally Speaking
- https://kscorn.com/wp-content/uploads/2018/12/4th-gradeTEACHERweb.pdf
- Sprout House Pictures by Ericka Collier, Teacher, USD 259 Wichita Public Schools