Harvesting and Eating Garden-Grown Popcorn

OBJECTIVES

Students will be able to *identify* plant parts by name, and make broad connections between their food and the garden. Students will learn that the vegetables and fruits that we eat come from one or more of the following plant parts: roots, stems, leaves, flower, fruits, and seeds. Furthermore, each plant part has a specific role to play in the life cycle of the plant.

Students will be able to *list ingredients* and *write step-by-step instructions* for a popcorn recipe.

KEY TOPICS

- Plant Parts
- Where Food Comes From
- Food as Energy
- Recipe Instructions
- Writing Procedure

HANDOUTS

- Popcorn Recipe Worksheet

MATERIALS

- Fully mature popcorn plants (or store-bought corn plants and popcorn seeds)
- Corn kernels to pop
- Oil
- Butter
- Salt
- Pot for popping popcorn (or air popper)
- Plug-in stove
- Small folding table
- Napkins/cups for popcorn
- Stapler

BACKGROUND INFORMATION

Like all plants, popcorn (*Zea mays everta*) has parts that serve very important biological functions for the plant and provide a source of food for people. The roots anchor the plant and take in water; the stem provides support and channel for plant-food and water; the leaves are the plant's sugar factories, turning light into food for the plant through photosynthesis; the flower reproduces new plants through a variety of ways, often utilizing living animals in pollination; and the seeds carry the embryo and the nutrients it needs to grow into another plant. While people categorize and use these plant parts in many ways, ultimately the purpose of the plants' parts is to create more plants.

Fall Popcorn Lesson – 3rd Grade

LESSON PLAN

1. **Looking at Popcorn Plants (20 min)**
    a. Remind students that seeds and fruit come in all shapes and sizes. Some seeds are little and many, some are big and alone, some are on the inside, others on the outside.
    a. Prior to looking at the popcorn plants, review the basic needs of all plants. Ask students to point out the roots, stems, and leaves. Then ask students to point out the flowers, fruit, and seeds; brainstorming other types of these parts will be helpful to understand why the popcorn flowers, fruit, and seeds look so different. Tell students, while some flowers have petals, corn has two types of flowers: the tassels and the silk. Like a green bean, the corn carries its seed in a pod-like fruit. Instead of a hard-shelled pod, it has husks!
        i. When talking about each plant part, connect the role it plays to the needs of the plant and humans. For example, when discussing the roots. The root takes up water, which the plant needs to survive. Do humans need water to survive?
    b. Ask students which plant part of popcorn we eat. The answer: the seeds! Ask students for some examples of other seeds we eat.
    c. Ask students if they know any plant stems
    d. Explain that you've left the fruit (cob) on the plants to dry, so that they will be ready to pop. Harvest one cob, and peel it open by letting students pull one husk-leaf at a time.
    e. Have any of the kernels been eaten? Ask students who they think ate the kernels. Explain that all animals need food, just like people. The food they've grown in the garden might have been shared with other animals and insects that live around their school. What sorts of animals do they think like popcorn? Some examples are squirrels, caterpillars, and maybe some birds.
    f. Harvest cobs and pull entire plant out of the ground.
    g. Show students roots and examine their role.

2. **Popcorn! (40 min)**
    a. As you set up, introduce the activity. What part of the plant is popcorn? The seed! In order to eat the seeds, we have to separate it from the rest of the plant. Demonstrate how to separate kernels from the cob and have each student separate kernels from a corncob. Rotating a metal bowl around the class.
    b. Collect the harvested popcorn seeds.
    c. Tell students that they have three options for the seeds they harvested: 1) grind them into cornmeal, 2) plant them, or 3) eat them. Remind them, that if they were to plant the popcorn seed, they would end up with a lot more popcorn! Ask students if they've had popcorn before. If so, where? What do they like to put on their popcorn?
    d. Hand out ***Popcorn Recipe Worksheet***. Explain that students are going to first list the ingredients needed for making popcorn. Remind them to think not only about the popcorn seeds, but what they like to eat on their popcorn.

After brainstorming as a group, allow students to complete the Ingredient List portion of the worksheet.

e. Review basic fractions, and allow students to complete the Recipe portion of the worksheet. Ask students why they think Kevin liked the third recipe the best? What would they predict the popcorn would taste like?
f. Collect the worksheets, pop the popcorn using a hot air popper or pot and lid. Make the popcorn topping using the recipe included in the worksheet.
g. Hand out paper towels, antibacterial gel and popcorn samples!

3. **Conclusion (5 min) –** Hand out envelopes or bags of un-popped corn and staple them to students' recipes. They may take these envelopes home to make their own popcorn!

AFTER THE LESSON

- Read "Who Will Plant a Tree?" by Jerry Pallotta
- Save popcorn seeds to plant in classroom or in garden during summer
- Compost the remaining parts of the popcorn plants as another lesson

Standards

3.NF.1 Develop understanding of fractions as numbers. Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)

3.W.4. With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.)