

## Activity: Tops & Bottoms

Activity Level: Beginner

### PURPOSE

Students will investigate where food comes from, the parts of the plants that we eat, and the crops that are grown in Nebraska.

### EXAMPLE TOPICS IT SUPPLEMENTS

Structures and Processes; Multi-Step Project; Listening.

### ACTIVITY SNAPSHOT

1. Organize and Prepare Supplies
2. Read Background Information
3. Interest Approach
4. Conduct Activity

Lead into activity on Nebraska's Tops & Bottoms.

Nebraska's farmers and ranchers grow many crops that are turned into products for us to eat and use.

5. Ask follow-up questions and make the connection to agriculture
  - What parts of the plants can we eat?
  - Where are fruits, vegetables and crops grown?

### STATE STANDARDS IT SUPPORTS

LA 2.3.2.c—Complete a task following multi-step directions.

LA 2.3.3.d—Listen, ask clarifying questions, and respond to information being communicated about a topic, text, or issue under study.

### MATERIALS

- Tops & Bottoms book
- Paper Plates
- Round-Heat 1" Fastener
- Markers/Colored Pencils/Crayons
- Nebraska Tops and Bottoms Sheet

### WHAT'S THE CONNECTION TO AGRICULTURE?

Agriculture Literacy Outcomes

Culture, Society, Economy & Geography

- Discuss what a farmer does.
- Trace the sources of agricultural products (plant or animal) used daily.

### PROCEDURES:

1. Organize and Prepare Supplies

See “Materials” on cover page.

2. Background Information

Plants are an important part of our everyday lives. We need them to make oxygen and they provide food and fabric so that we can have something to eat and something to wear. They also provide shelter and they can even be used to make fuel for transportation. In some way, we use every plant part that there is. We eat the roots of some plants, the leaves of other plants, and we eat the fruit of many plants. It is seldom that we eat the entire mature plant. Usually when we eat plants, we call them either fruits or vegetables.

The botanical definition of a **fruit** is the part of a plant that develops from the flower and contains the seeds of the plant. The fruit covers and protects the seeds. A fruit may have fleshy or dry tissue. The definition of a **vegetable** (which is not a botanical term) is any edible part of a plant that does not contain the seed. Vegetables are usually the roots, stems, or leaves of the plant. In many cases these definitions do not match our cultural categorization of fruits and vegetables, which is generally based on whether the edible portion of the plant is sweet (fruit) or not sweet (vegetable).

Vegetables generally come from vegetative parts of plants. For example, lettuce and spinach are leaves, carrots and beets are roots, and broccoli and cauliflower are immature flowers. Other plant parts are more difficult to identify. Potatoes are not roots; rather, they are swollen underground stems (tubers). Onion bulbs are composed of modified stems and swollen leaves. The roots (which are not eaten) are attached at the base of the bulb.

Seeds are found inside the fruit of plants. A seed has a hard, protective outer coat (seed coat), and inside a seed is a baby plant (embryo) surrounded by its food supply (cotyledon or endosperm). Sometimes we eat the seeds of a plant, like when we eat corn, peas, beans, rice, wheat, and nuts.

Seeds are important. They are the means by which plants reproduce. In order for fruit and seeds to form, the flower of the plant must first be pollinated. Seeds come in a variety of sizes, shapes, and colors. As a seed sprouts, the parts of the plant develop. The roots, the underground part of the plant, take up water and minerals (nutrients needed for growth). The stem supports the leaves and flowers. The leaves capture energy from the sun for the plant (photosynthesis) and contain tiny holes or pores that allow moisture and air to move in and out of the plant.

Some students do not know that we eat plants. Others will have an understanding that we eat plants like fruits and vegetables to stay healthy, but they may have limited knowledge about what parts of plants we eat, why they are categorized as fruits or vegetables, or what farmers have to do to grow them. This lesson will help students investigate and observe fruits and vegetables to learn about the parts of plants and the basic needs of living things.

### 3. Interest Approach

Ask students to tell you what some of their favorite fruits and vegetables are or to name some that they commonly eat. Write these on the board or a poster, and tell the students that you will come back to them later.

Next, ask if they can tell you where fruits and vegetables come from.

Read the book, *Tops and Bottoms* by Janet Stevens

- Summarize the book:
  - i. What parts of the plants could hare eat? *Tops, bottoms and middles*
  - ii. Refer to the list from earlier. Ask students if they are eating the tops or bottoms.

### 4. Conduct Activity

Lead into activity on Nebraska's Tops & Bottoms. Nebraska's farmers and ranchers grow many crops that are turned into products for us to eat and use. Complete the following activity.

#### Part 1

- a. Cut the colored paper plate in half.
- b. Take the fastener and punch it through the two halves of the paper plate and into the white plate.
- c. Write the word "Tops" on the top half of the cut plate; Write the word "Bottoms" on the bottom half of the cut plate.

#### Part 2

- a. Cut out the crops from the Tops and Bottoms Crop Sheet.
- b. Glue those crops to the top or bottom of the white paper plate where they belong.
  - i. Tops: Corn, Soybeans, Wheat, Dry Edible Beans; Bottoms: Potatoes, Sugar Beets

### 5. Ask Follow-Up Questions and Make the Connection to Agriculture

- What parts of the plants can we eat?  
*We eat many different parts of plants, some of which grow above ground and some grow underground.*
- Where are fruits, vegetables and crops grown?  
*Farmers plant seeds, water and weed the plants that grow, harvest the fruits and vegetables, and send them to the market where we can buy them to eat.*

Nebraska Tops and Bottoms Crop Sheet

Dry Edible  
Bean



Wheat



Sugar Beet

Corn



Potato



Soybean

