

Activity: Seed Sorting

Activity Level: Beginner

PURPOSE

Students will observe various types of seeds and be introduced to seeds grown in Nebraska.

EXAMPLE TOPICS IT SUPPLEMENTS

Sorting; Identification; Drawing Conclusions.

ACTIVITY SNAPSHOT

1. Organize and Prepare Supplies
2. Read Background Information
3. Interest Approach
4. Conduct Activity
Break students into groups and have them guess which seed belongs in which box on the list with seed names. Review the uses of seeds.
5. Ask follow-up questions and make the connection to agriculture
 - Are seeds all the same size?
 - What are the functions of seeds?
 - What are examples of seeds that we eat?
 - What do we grow with seeds?

STATE STANDARDS IT SUPPORTS

LA 0.3.1.a—Communicate ideas clearly to others within structured classroom activities and routines using appropriate word choice, proper grammar and complete sentences.

LA 0.3.2.c—Complete a task following one/two-step directions.

MATERIALS

- Diagram with circles
- List with seed names
- Seeds (sugar beet, corn, soybean, sunflower, grain sorghum, oats, dry edible beans, and wheat)
- Optional (Corn A to Z Poster and Soybean A to Z Poster)

WHAT'S THE CONNECTION TO AGRICULTURE?

Agriculture Literacy Outcomes

Plants and Animals for Food, Fiber & Energy

- Identify examples of feed/food products eaten by animals and people.

VOLUNTEER ENRICHING ACTIVITY

PROCEDURES:

1. Organize and Prepare Supplies
See “Materials” on cover page.

2. Background Information

Seeds are important to the life of a plant because they allow for growth and reproduction. However, student’s experience with eating fruits and vegetables that contain seeds would be required to help them gain an understanding of their various uses. Seeds are an important part of the agricultural plant production process because farmers plant seeds for most crops in the spring such as wheat, corn, and oats. These seeds **germinate** or sprout and then grow throughout the summer with the correct amount of moisture, sunlight and soil. In the fall, the mature plant produces **grain**, a cultivated seed harvested for food such as wheat, soybeans, rice, oats and corn. These seeds are used in a variety of ways depending on the crop in addition to being used as food for livestock animals and humans.

Plants produce seeds so their species will continue to exist in nature. The seeds are the storehouse for the beginning of a plant because it supplies the plant with needed nutrients to grow. Each seed contains a tiny plant embryo with one or two **cotyledons** or seed leaves, which supply the seed with energy and materials for growth until the young plant grows its first true leaves. At this stage it will make food for itself through a process called **photosynthesis** while using water, carbon dioxide, and sunlight. Without seeds, humans would not have essential products such as food, fiber, fuel, and by-products.

Seeds provide nourishment to people all over the world. Corn, oats, rice, and wheat seeds are known as cereal grains and are part of the grains food group. Whole grains are an important source of dietary fiber, which is important for proper bowel function and may lower the risk for heart disease and obesity. Grains are also a source of B vitamins, which help the body release energy from the food that we eat.

Edible seeds, known as **legumes**, include peanuts, peas, and beans. Other edible seeds include nuts, such as walnuts, almonds, pistachios, and pecans. These nuts have protein and are part of the protein food group. Proteins are an important part of our diet because they serve as building blocks for muscle, cartilage, bones, blood, and skin.

Livestock producers that raise animals for meat consumption such as beef cattle, chickens, turkeys, and hogs often use feed grains such as corn and soybean meal for the base of their animal feed. These grains provide the animal with a high-protein diet needed for growth. The major feed grains in the United States include corn, sorghum, barley, and oats. Corn accounts for more than 95% of total feed grain production and use.

3. Interest Approach

Have examples or photos of a sunflower, soybean and wheat.

Cut open (or show photo) of each food item and display the seeds. Ask the following questions:

- a. What are these?
- b. Where do you think seeds come from?
- c. Why don’t they all look the same?

- d. What are they used for?
- e. Can we eat seeds?
- f. Do farmers use seeds on their farms? How?

Record students' responses on a white board or poster paper. Use the responses to explain that you have displayed examples of seeds. Seed are produced on a plant once it is fully grown. Seeds have many purposes and some we enjoy eating like sunflower seeds, edamame or pumpkin seeds. However, some seeds are used for planting by farmers and we don't eat them, but we eat the products they produce, such as bread made from wheat.

4. Conduct Activity

Part 1

- a. Break students into groups and divide the seeds. Each group needs a copy of the List with seed names.
- b. Have students place the seeds in the box they think the seed is.
- c. After guesses are complete, discuss where each seed belongs and the main use of the seed in Nebraska.
 - i. **Sugar Beet** – More than half of the sugar you eat comes from sugar beets.
 - ii. **Corn** – This is the most widely grown crop in Nebraska and has a variety of uses from feeding livestock and poultry, to producing gas for our cars (ethanol), and even for us to eat! (Show Corn A to Z Poster)
 - iii. **Oats** – This Nebraska crop is used to feed animals in Nebraska.
 - iv. **Sunflower** – These seeds may be roasted for snacks and used in baking as well as used for bird seed.
 - v. **Soybean** – This Nebraska crop is used to feed animals such as pigs and chickens, make big buses drive and is inside food we eat and products we use! (Show Soybean A to Z Poster)
 - vi. **Dry Edible Beans** – Do you enjoy chili beans or refried beans? This Nebraska crop is in many of the foods we eat.
 - vii. **Grain Sorghum** – Also known as milo, sorghum is used to feed animals and can even be used for flour.
 - viii. **Wheat** – Wheat is ground and turned into flour used for bread and pastas!

Part 2 (Optional)

- a. Give each group a Seed Sorting diagram. Place all seeds in the top circle.
 - b. Have students sort their seeds into each of the three circles. Students can sort their seeds based on color, size, or use. Label their diagram with how they separated each group.
 - c. Have two groups share why they sorted their seeds the way they did.
5. Ask Follow-Up Questions and Make the Connection to Agriculture

At the conclusion of this activity, review and summarize the following key concepts:

- Are seeds all the same size?
Seeds come in various shapes and sizes.

VOLUNTEER ENRICHING ACTIVITY

- What are the functions of seeds?

Seeds have many functions, including plant reproduction, a common food source for humans, and a base for livestock feed.

- What are examples of seeds that we eat?

Examples of seeds we eat include sunflower seeds, beans, corn, etc.

- What do we grow with seeds?

Farmers grow plants with seeds.