



MIGHTY CROPS

Lesson Objective

To introduce major agronomic crops and their uses in our daily lives.

Learner Objective

Students will become familiar with corn, wheat, rice, and soybeans and their uses.

Educational Outcome

Students will be able to identify common products made from corn, wheat, rice, and soybeans.

Core Concept Areas

Reading, science, art, writing

Materials Needed

Interest Approach: Popped popcorn, toasted soy nuts, Rice Chex cereal, mini pretzels, M&M's, small cups

FARMtivity 1: FARMcabulary

FARMtivity 2: Grain packages, glue, tape, scissors, markers

FARMtivity 3: Soybean, rice, corn, and wheat seeds in zipper-sealed plastic bags, toasted soybeans, Rice Chex, popped popcorn, and pretzels in plastic bags, small pots, and potting soil

FARMcabulary

Corn – Cereal plant, or maize, yields large grains, or kernels, set in rows on a cob. Many products are made from corn for both human and livestock consumption.

Soybeans – Widely cultivated plant of the pea family that produces edible seeds.

Grain – Wheat or any other cultivated cereal crop (oats or barley) used as food.

Whole Grain – Made with or containing whole unprocessed grain.

Wheat – Cereal plant that is the most essential kind grown in temperate countries. This grain is ground to make flour for bread, pasta, pastries, and other items.

Rice – Swamp grass, which is widely cultivated as a source of food, especially in Asia.

Legume – A leguminous plant (pea family member), especially one grown as a crop.

By-products – An incidental or secondary product made in the manufacturing process of something else.



FARMfacts

Soybeans, corn, rice, and wheat are major food crops grown in Mississippi. These crops supply food for humans and animals as well as by-products such as crayons, glue, and plastics. These grains and beans are considered agronomic crops because farmers grow these food crops in large quantities and depend on the harvest of these crops to make a living.

Soybean Facts

- Mississippi farmers produced 2,280,000 bushels of soybeans in 2022.
- There are 3,087 farms in Mississippi.
- Mississippi ranks 12th in the United States in soybean production.
- One bushel of soybeans produces 10.7 pounds of soybean oil and 47.5 pounds of soybean meal.
- Both soybean oil and soybean meal are used in a wide variety of food and industrial products ranging from barbecue sauce to candy bars and from paint to dog food.

Corn Facts

- Mississippi farmers produced 91,850,000 bushels of corn in 2022.
- There are 1,427 corn farms in Mississippi.
- Corn was first used for food 10,000 years ago by indigenous people living in what is now Mexico.
- Mississippi ranks 21st nationally in corn production.

Rice Facts

- Mississippi ranks 6th nationally for rice production.
- There are 221 rice farms in Mississippi.
- Rice is the primary dietary staple for more than half the world's population.
- More than 80 percent of the rice consumed in the United States is also grown in the country.
- Americans consume about 25 pounds of rice per year.

Wheat Facts

- Mississippi farmers produced 3,975,000 bushels of wheat in 2022.
- Wheat is the world's most important food crop and is used more for human purposes than animal feed.
- There were 162 wheat farms in Mississippi in 2022.
- There were 53,000 acres of wheat harvested in Mississippi in 2022.

Interest Approach

Students will engage in a hands-on activity to identify which snack item belongs to which commodity group (corn, rice, soybeans, and wheat).

Create a snack mix with the following ingredients and put in small cups:

- Popped popcorn
- Toasted soy nuts
- Mini pretzels
- Rice Chex cereal
- M&M's

Give each student a cup of the mixture and ask them to identify what is in the mix. Explain to them that, other than the M&M's, all the ingredients are from grains. Ask them to identify the grain from which each food was made. Popcorn is from corn, pretzels are made from wheat, Rice Chex is from rice, and soy nuts are made from soybeans. Students can eat the snack mix after they finish.





Most students are familiar with cereal and snack foods made from grain and soybeans. Explain that the significant grains grown in Mississippi are corn, rice, and wheat. Soybeans are not grains but legumes, which is another name for a bean. Soybeans and grains are sometimes grouped together because they are agronomic crops, which means they are staple food crops. Agronomic is a word derived from two other words, agriculture and economic.

FARMtivity 1: FARMcabulary

Have students write a story about a trip to the grocery store to buy grain and soybean products using the FARMcabulary words. Give students any additional guidance for completing this assignment by encouraging them to use specific names that their peers would be familiar with to help students identify the products that use the vocabulary words.

FARMtivity 2: From Farm to Home Scavenger Hunt

Note: This may take several days to complete.

Explain to students that the snacks they just had are a few of the products we use daily, from grains to soybeans. This activity will help us learn more about the food we eat and where it comes from.

Have students look around their homes and find products made from grains and soybeans and bring empty cereal boxes, snack boxes or bags, pasta containers, bread wrappers, etc., to make a classroom collage on the bulletin board to illustrate foods that are made with grains and soybeans. Students will need to read the labels and find products with corn, wheat, rice, or soybeans listed on the label. Remind them to think outside the box, not just cereals and snack foods. Soft drinks and other products are sweetened with corn. Remind students that grains and soybeans are also used in animal feed and other products around the house.

Students can dig deeper by researching each grain and soybeans to find other products made from them.

Title the collage *Grains and Beans - From Farm to Home*. Products should be grouped by wheat, corn, rice, and soybeans. To add to the collage, students could draw or find a picture to represent the corn, soybean, wheat, and rice plants.

FARMTivity 3: FARMreads: Digging Deeper – From Seeds to Plants

Materials needed

- Soybeans, rice, corn, and wheat seeds in zipper-sealed plastic bags
- Toasted soybeans, Rice Chex, popped popcorn, and pretzels in plastic bags
- Small pots
- Potting soil

Procedure

Pass the bags of seeds around the room and allow students to take one seed from each bag. They should glue the four seeds on the *Name that Seed* worksheet. Have them examine the seeds before gluing.

Then, ask the following questions:

1. Which seed is the largest? (corn)
2. Which seed is the smallest? (wheat or rice)
3. Which seed is round? (soybean)
4. Which seed is long and skinny? (rice or wheat)
5. Which seed is yellow? (corn)

Pass the bags containing the grains and soybean snack products. Have each student take one snack from each bag, place it on the worksheet in the appropriate space, and glue it in place. You may need to help them decide which snack came from which seed.

Under each seed and snack, have students write a word or two (use adjectives) to describe the item. For instance, the corn seed is yellow and hard; the popped popcorn is white and fluffy.

Divide the class into four groups and give each group enough pots and potting soil for each group member. Give group 1 enough soybean seeds to plant their pots. Give group 2 rice seeds, group 3 corn seeds, and group 4 wheat seeds. Each group will plant seeds in individual pots.

Have students water their potted seeds and place them in a warm, sunny spot. Students should observe the growth of their plant and write the progress on the *Watch My Plant Grow* worksheet.

After a few weeks, plants should be large enough to transplant into larger pots. Allow students to take their plants home and re-pot or plant outside. Re-pot one plant per group to be left in the classroom for students to continue observing using their group's plant on the *Watch My Plant Grow* worksheets.



Name That Seed

Glue the seeds and snack foods below. Compare the seeds to the snack foods and write how they are alike and different in the space below the snack.

Soybean Seed

Toasted Soybean

Wheat Seed

Pretzel

Name That Seed (Continued)

Rice Seed

Rice Chex

Corn Seed

Popcorn

Watch My Plant Grow

Name of Seed: _____ Date Planted: _____

Date when seeds begin to sprout: _____

Describe what this looks like in words or pictures.

Date when the first set of true leaves appear: _____

Describe what this looks like in words or pictures.

Date when plant is 3 inches tall: _____

Describe what this looks like in words or pictures.

Date when plant is too big for the small pot: _____

Describe what this looks like in words or pictures.



Continue observing the group plant after it has been re-potted into a larger pot. Write your observations on the next sheet.

Watch My Plant Grow: Observations



References

Mississippi State University Division of Agriculture, Forestry, and Veterinary Medicine. (2022). [*2022 Mississippi Ag Fact Book*](#).

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