

# RICE, FROM THE FIELD TO YOUR FORK

Grade: 1st -12th | Time: 20 minutes

## INTRODUCTION

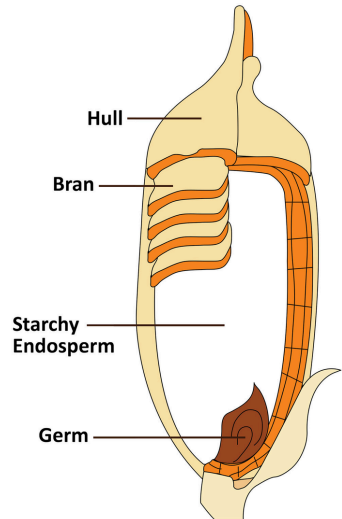
Rice is a cereal grain that is harvested with its hard protective shell still intact. To become edible, this fibrous, indigestible shell must be removed from the rice kernel. This is done at a rice mill with rollers that create enough friction and pressure on the rice kernel to strip away the outer shell, but is gentle enough to not break the kernel. In addition to protecting the rice kernel in the field, the rice shell can be used for building material, insulation, fertilizer and fuel. Once the shell is removed, the rice kernel is called brown rice. Brown rice does not have a shell, but does have an edible bran layer that is left on the kernel and gives it a brown color. For customers that want white rice rather than brown rice, the rice mill will take the brown rice and use similar rollers to polish the bran layer off of the kernel, resulting in a shiny white rice kernel.

## OBJECTIVE

In this activity, students will act as a rice mill by using sandpaper to turn rough rice into milled white rice. After completing this activity, student will have a better understanding of the process rice goes through to get from the field to their fork.

## MATERIALS NEEDED PER STUDENT

- 5 pieces of rough rice (rice with its outer shell)
- 2 pieces of 3"x3" sandpaper (80-120 grit)
- Magnifying glasses (1 per student or a few per group - optional)



This activity was adopted from the National Agriculture in the Classroom "More than One Grain of Rice" Lesson

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Continued

## ACTIVITY INSTRUCTIONS

Each student will need 2 pieces of sandpaper and 5 pieces of rice. One magnified glass per student and/or group is optional.

Place the rough rice kernels on one piece of the sandpaper and place the other piece of sandpaper on top.

Gently rub the two pieces of sandpaper together until the outer hull of the rice kernel starts to flake off. Encourage students to take this step slow; making sure they are only removing the outer hull, not the bran layer. A rice kernel without the hull is considered brown rice.

Following the same steps as before, place the brown rice kernels between the 2 pieces of sandpaper and gently rub them together until the bran is removed and the kernel becomes white in color. A rice kernel without the hull or the bran layer is considered white rice.

Throughout this activity, encourage students to explore and rice kernel at the end of each phase in the milling process.

### 1. *Rough Rice:*

- What is the texture of the hull?
- Why do you think rice has a hull?

### 2. *Brown Rice:*

- Did the hull come off of the kernel easily?
- What does the bran feel like?

### 3. *White Rice:*

- Was the bran and germ easy to get off of the kernel or hard?
- Did all kernels make it through the whole milling process without breaking?  
If not, why do think they broke?

### **ROUGH RICE**

Rice kernel with its hull



### **BROWN RICE**

Rice kernel without its hull  
but still has its bran layer  
and germ



### **WHITE RICE**

Rice kernel without its hull  
or bran layer

