



A Journey Through the Rice Mill

Learn how rice is processed to become edible, and how its by-products are used.

Activity

In order for harvested rice to be edible, the hulls must be removed. Brown rice is hulled rice and white rice is obtained by milling further to remove the rice bran. This leaves the rice with a soft texture that reduces cooking time.

Rough rice to brown rice

1. Have students place a mouse pad on their desk. Place several pieces of rough rice on a mouse pad or rubber piece and lay the second mouse pad on top.
2. Rub the two pieces back and forth until all of the hulls are removed from the rice kernels. Rice hulls, the by-product, are often burned in biomass factories to produce energy or incorporated into animal feed. Brown rice is packaged and sold for human consumption.

Brown rice to milled white rice

1. Place one piece of sandpaper flat on the desk. Place several kernels of brown rice on the sandpaper and lay a second piece of sandpaper on top.
2. Rub the two sheets of sandpaper together for 3-5 minutes. When finished, the students will be able to observe two distinct rice products—milled white rice and rice bran. Rice bran, the by-product, is used as an additive in several different food products. White rice is packaged and sold.

Materials

Per Student

- Two pieces of 70-100 grit sand paper
- Rough rice (paddy rice)
- Two mouse pads or flat rubber pieces

Tip

Ask a local farmer for rough rice and to be a guest speaker.



Classroom Activities

Science

- Design an experiment to measure the thermal energy created during the milling process.

English Language Arts

- Research how the by-products of rice are used and write a research paper about the process from planting to the product. Remember to cite references and resources. Examples include rice hulls and rice bran.
- Research the history of rice in California and the major methods in which it is grown. Present your findings in an oral presentation.
- Discuss the nutritional differences between white rice and brown rice. Create a balanced meal using *The 2015-2020 Dietary Guidelines* as a reference.
- Research the geographic region in California where rice is grown. Locate the areas on a map and present the results to the class.

California Standards

Grades 9-12

NGSS: HS-PS3-4

Grades 11-12

ELA CC: W.11-12.4, 7, 9; SL.11-12.4

Grades 9-10

ELA CC: W.9-10.4, 7, 9; SL.9-10.4

This lesson can be easily adapted to meet the educational standards for a variety of grade levels.

Adapted from CFAITC's Rice Fact and Activity Sheet

