Amazing Acorns: The Chumash staple food

Grade 3-4

Supplies

- Acorns (dried – see Activity: Acorn Collection)
- California Oak ID website (http://www.hastingsreserve.org/oakstory/OakID.html)
- Stone for cracking acorns
- Baskets
- Container with water
- Rock lifter
- Mortar and pestle
- Sift
- Soap plant brush (or soft bristled brush)
- Coffee filter
- Bowl or pot
- Rocks
- Sticks

Background information

California has many species of native oak trees and the Chumash once relied on acorns as one of their staple foods. Acorns were collected in the fall, dried in the sun, and stored in large basket granaries for future use. In some areas acorns were ground in bedrock mortars. These mortars were usually located in clusters in a suitable outcrop of bedrock in an oak grove near a stream. In other cases, portable stone mortars were used.

For the following activity, you will use a modified version of the acorn preparation process, and will not cook or eat them at the end, but will generally follow the process the Chumash used, as follows.

1. Acorns were collected in willow bark bags off the ground or by knocking the ripe acorns from the trees
   a. RELATE: We use reusable bags today when we go grocery shopping
2. Acorns were dried in the sun for 15-20 days before being shelled.
3. To shell acorns, the Chumash would find small holes in the rocks and place the acorn point side down. A heavy rock was used to smack the other end of the acorn once or twice to crack it.
   a. The shell was removed to reveal a slightly fuzzy skin surrounding the seed.
   b. RELATE: When cracking open a peanut, you can find that smooth flaky skin around the seed. Just like peanuts, the shell isn’t edible, but the seed inside is.
4. The acorn was dried again until the skin became flaky and easy to remove.
   a. Seeds were sometimes stored shelled for 6 months to a year in granaries.
5. Winnowing was the next step – a process of tossing the shelled seeds lightly into the air using a flat basket – the seeds and the flaky skin would fly off in the wind.
6. The winnowed acorns were pounded (not ground) into a fine powder with a heavy rock in a mortar, which looks like bowls in rocks, very similar to the ones we have at the Garden.
   a. RELATE: People still use mortar and pestles to grind herbs and spices.
7. It is unclear if it was common practice to sift the pounded acorns, but some Chumash did. Using a brush made of soap root, they would brush larger fragments back into the mortar for further pounding.
8. The fine acorn flour was leached using bowls or tightly woven baskets to remove the bitter taste.
   a. RELATE: We do a similar process when we drink coffee (also has a bitter taste), but instead of being interested in the liquid that comes out of the process, the Chumash were interested in the grounds.
9. The leached acorn flour was made into mush by mixing it with water in a tightly woven basket
10. Soapstone rocks were heated in the fire and then put in the basket to heat the mush. These rocks were constantly stirred while cooking, to keep the basket from getting burned, and to keep the slurry boiling.
   a. Rocks were dipped in water before being placed in the cooking mush to remove any ash.
   b. If the boy who was tending the fire had done a good job, he would be able to lick the cooled, mush-coated rocks.
      i. RELATE: Cooking with your parents or grandparents, have you ever gotten to lick the spoon as a reward for a good job?
   c. The laziest boy in the village stirred the large basket of mush while it cooked.
11. The acorn water mixture was cooked until it was a thick mush.
   a. Left overs could be dried in a basket to make a dense cake that would last a few days.

It would take almost a month to prepare the massive baskets of acorn mush, but the mush would only last 2-3 days after cooking. Maria Solares, a Chumash Native American who was entrusted with the culture and stories of her tribe, stated, “Whatever one has, one eats with acorn mush”.

**Activity: Acorn Collection**

Ask students to look for different acorns and oak trees. If time allows, collect acorns with your students and dry them outdoors. You may need to put mesh netting over them when they’re outside to prevent squirrels from taking them for food! If you don’t do this as a student activity, collect and dry the acorns in advance. Wet, fresh acorns can’t be used for this activity. Avoid acorns with holes in the hull or those that are green or too small.

**At the Santa Barbara Botanic Garden**

**Activity: Making Acorn Mush**

Bring the materials listed under supplies, and use our rock mortars in the Arroyo Section to crack and grind acorns. Be sure to ask the Education Department (tours@sbbg.org) if there is a conflict before planning your visit. If there is, the mortars will be in use and unavailable at that time.

Use the California Oak ID website to find different oaks around the Garden. Note how their leaves and acorns are different depending on the species.

**At School**

For your class, you can use the shorter steps below to experience the process of making acorn mush:

1. Crack acorns with a stone and shell them.
2. Put acorns in mortar and ask students to pound the acorns into a meal using a pestle.
3. Sift the acorn meal through a mesh sifter (the Chumash would use a special basket) and return the coarser grains to the mortar for more pounding.
4. Use a soft bristled brush or hand broom to remove acorn flour from the sifter.
5. Ask students to work together to hold the coffee filter and run water through the fine acorn flour. This activity may be messy and is best done outside.
6. After running water through the acorn flour several times put it into a bowl or pot for ‘cooking’.
7. Ask students to add water to the acorn flour. Students work together to pretend to heat the rocks and place them in the basket while another student stirs with a stick.
   a. Ask: Why do students think they used rocks instead of putting the basket on the fire like we would put a pot on the stove to boil its contents? The baskets would catch fire if they did that – they didn’t have metal pots like we do today.

In the end, students will have a soupy acorn mess, but if heat was applied it would be the consistency of oatmeal or cream of wheat. Students should not eat the acorn soup!

See Acorn Preparation for more information.