

GOURD EARTH PROJECTS

These are excerpts from my booklet of projects (called [Fun with Gourds](#)) for the Gourd Earth Project. The booklet is low cost, just enough to help cover the costs I have for making the tiny gourds that I give out. Start reading it to prepare for the gourds you grow next year!

To start right away, dried gourds of all sizes can be purchased on ebay, ETSY, or individual gourd farmers online. I am working on putting together some kids kits so that you would have everything you need to get started.

In the meantime, here are some projects you could do once you get some gourds.

Project #1: GOURD WHISTLES



Background

Gourds are made into all kinds of musical instruments from this simple whistle, along with rattles, up to trompaz (like a soft sound trumpet) to various drums and string instruments. This project uses mini-bottle, 3" to 5" tall, gourds that only cost from \$.75 to \$1.00 to buy as dried gourds. Look online since local supplies are very hard to find.

Here is how the make a sound on the gourd whistle from my good friend, Martin Espino. [Video on whistle.](#)

ACTIVITY: Make Your Own

STEPS:

1. The first step is to make the blow hole that will be used to make the sound. Note very carefully the placement of the hole, which is up along the curve of the top (smaller) bulbous part of the gourd, very close to the stem. This photo shows some of the tools you might use in starting the hole and then making the hole which can be about 1/2 " diameter and slightly oval shape. Then you use these same tools to scrape the inside of the gourd and get out as much of the dried pulp (fluff) and seeds as you can. Round 1.



2. The next step will be to do Round 2 of the clean-out. Rinse out and then leave water in the gourd for a few hours and then do some scraping and cleaning out again. You want the inside to be as clean as you can so it resonates when you blow into the hole.



3. After it dries, you are ready to use water-based stain and/or acrylic paint to decorate the gourd. I use simple geographic patterns which reflect how Native Americans decorated their gourd bowls and instruments.



4. Let the little gourd dry and you are ready to practice making the sound. See this video to get the idea for how to do it. After a few tries, you'll get the sense for how to pucker your lips and the right amount of air to blow. Try to blow straight ahead and not down.

Project #4: GOURD GENETICS

ACTIVITY: This project involves some research into gourds. Go to your library and ask to use their science databases. You will be amazed how many scientists have studied gourds! Try **GreenFILE** or **Science Online** databases.

Tip: Bottle gourds are under **Lagenaria siceraria**, the scientific name for this species.

Until recently the origin of bottle gourds in North America was a mystery. There were differing hypotheses about when they appeared and where they came from. In 2005, research came from the National Academy of Sciences (NAS) concluding that bottle gourds in the Americas were closer genetically to Asian varieties, so ancient peoples who migrated across the Bering land bridge more than 10,000 years ago must have taken gourd seeds with them. However, the theory was not perfect. One trouble was that the theory meant a plant that had thrived in tropical climates had to have been cultivated in colder North American lands.

However, in 2014 research coming from NAS again, but using new, **highly sophisticated genetic testing methods**, found a more definitive answer. This time it clearly showed African origins for the gourd. "The technology has come an incredibly long way since the 2005 study, so now we can look at this question in a lot more detail," said the lead scientist of the study at Pennsylvania State University, Dr. Logan Kistler.

The origin issue was settled by recreating the plant's family tree; the researchers isolated DNA taken from modern bottle gourds around the world and ancient ones found at nine archaeological sites throughout the Americas. The pre-Columbian artifacts from the New World, they found, were linked directly to African relatives. They concluded gourds must have

floated to the Americas on their own but were then modified by indigenous peoples in the New World. Popular press notices of Kistler and Smith's work abound.

ACTIVITY: Find this article -- Watson, Traci. *How the Humble Bottle Gourd Got to the New World*. USA Today, February 10, 2014.

Several important insights were gained from this work on the question of gourd origin. In fact, given the age and evolution of genetic material, both Genus Cucurbita and Lagenaria, are now considered some of the oldest domesticated plants in the world.

To double-check the conclusion that gourds floated across the Atlantic Ocean, the team created a computer model of Atlantic Ocean currents. Next, the team ran computer models showing what happens to gourds bobbing in the sea off Africa. A good number made it to South America after less than a year, a voyage short enough for the gourd seeds to still sprout after making landfall. "The gourd," Dr. Logan Kistler said, remains "enigmatic." "It's so widespread so early on, and it's used so cross-culturally." "We have much more to learn about this species."

Now find this scientific article. You don't need to read the entire article but look at all the scientists and institutions involved. Lots of people are interested in gourds!

The source scientific study for the ocean voyage is: Kistler, Logan; Smith, Bruce D; et al. *Transoceanic drift and the domestication of African bottle gourds in the Americas*. Department of Anthropology and Institutes of Energy and the Environment, Pennsylvania State University, University Park, PA. Proceedings of the National Academy of Sciences. February 25, 2014. www.pnas.org/cgi/doi/10.1073/pnas.1318678111

Project #7: NATIVE AMERICANS & GOURDS

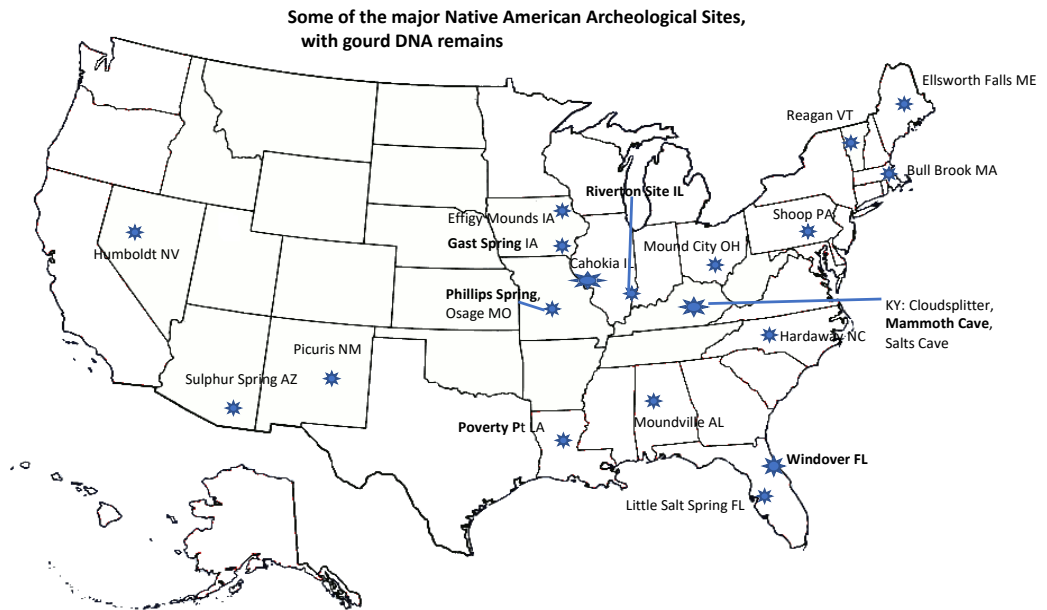
This project focuses on learning about the earliest humans to live in the Americas. We now know so much more than a few decades ago. Indigenous peoples settle the Americas from 15,000 to 30,000 years ago. When Columbus arrived, this was not an undiscovered land.

Millions of people lived in North and South American by 1492. And they not only were settled but had built large cities and had a sophisticated agriculture.

This is an impressive finding. It is true that we have grossly underestimated the level of effort, sophistication, and progress early peoples made in their efforts at farming. One of the most impressive aspects of Mesoamerican and South American agriculture is the large number of different crops that Indian farmers were able to produce —more than 300 of them. And these efforts later impacted all Western Civilization.

In the Archaic periods from 10,000 BC to 3000 BC the climate gradually warmed and food sources diversified. As the hunters became more skilled in creating stone tools, such as axes

and knives, they were able to build canoes and wood shelters. The chart below shows the time periods for each of the cultures and how scientists classify them. I highlight the Woodland cultures since more advanced agriculture, better preserved sites, and more gourd remains were found during these times.



It is now known that indigenous farmers first raised bottle gourds and pumpkins as early as 8000 BC. [Note: people use both the BC/AD time periods, i.e., 8000 BC or the BT time scale meaning before current time.]

Native Americans began selecting seeds from successful fruit and kept building toward more nutritious and high yielding crops. Sometime between 5200 to 3400 BC, their crops had evolved to include maize or corn, tepary (related to lima beans), black and common (kidney) beans, Chile peppers, avocados, and two kinds of squash plus bottle gourds.

By 3400 to 2300 B.C. their agricultural productivity was high enough to create a surplus, enabling them to live in more permanent villages within walking distance of their fields. Then later, between 2200 and 500 B.C., they began to cultivate sunflowers and manioc (i.e., yuca), and later today's lima beans, squash, tobacco, and cotton.

By about 1000 B.C. Mesoamerican Indians had become full-time farmers. Between 900 B.C. and

A.D. 700 they became experts at irrigation and added new crops such as runner beans, tomatoes, peanuts, and guava to their harvests. At that time, they had worked out methods for cotton weaving, turkey breeding, and salt production. Primitives, they were not!

ACTIVITY:

1- Time to READ MORE. Go to:

<https://www.knowledgeresources.info/shortgourds>

This is the quick history. Click on the links for more history. Go to the YouTube videos I made that shows results from current archaeological digs and the gourd remains they found.

Do some web research and you can actually visit pages for these digs and other research and see what they are doing, along with new finds they have!

2- Dive deeper. **Go to the library** and take out books on Native Americans-History – Eastern or Native Americans- Mississippian Period. The Mississippians live around 1,000 AD and contributed much to cultivating new crops, as well as gourds!

3- Or buy my book about the gourd's impact on history and culture at:

<https://a.co/d/hlBy88v>

This will give you a in-depth look at a study around one very specific topic, i.e. bottle gourds. There will be times in your career when someone will say, “Find out everything you can about....” This book will show you how that would go.