



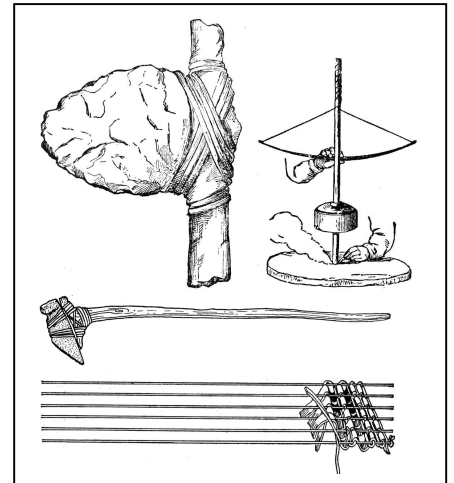
## Native American Technology

Grade Level: 4<sup>th</sup> - 8<sup>th</sup>

Subject: Social Studies, Language Arts, Art

Duration: Part One: 45 minutes, Part Two: 30 minutes

Materials: Seven (for max. of 21 participants) tool replicas, Technology worksheets, clipboards, pencils, raffia or natural fiber



Sunshine State Standards: SS.2.A.2.1; SS.2.C.2.5; SS.2.E.1.1; A.2.5.2.4; SC.2.N.1.1; SC.2.N.1.2; SC.2.N.1.3.

**Overview:** Working together in small teams, students will examine Native American tool replicas. The team members will study each tool and brainstorm its purpose, considering different ways it might have been used by the native people. They will inspect the tool to determine the materials used to create it. Students will complete a worksheet about their implement, answering critical thinking questions and creating an artistic representation of the tool's use. Worksheets will be given to the teacher for further classroom study. During the second part of the activity, the teams of students will try their hand at making a reproduction of rope used by Native Americans.

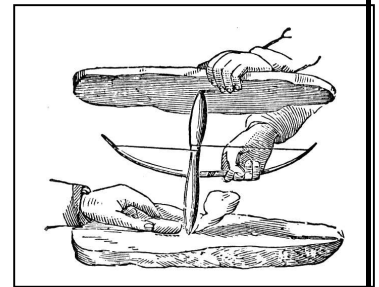
**Objectives:** Students will work together, building cooperation and other teamwork skills, in order to complete this activity. They will investigate a replica object, using critical thinking skills to evaluate and determine its use and composition. Students will then get creative by illustrating their ideas. They will also utilize listening skills and practice following directions as they work together to create rope.

**Background:** At Emerson Point, we can see evidence of the area's ancient inhabitants by examining the clues they left behind. From the giant Temple Mound to the scattered shell fragments we can conclude that this area was once a busy cultural center. The village at Emerson Point was drastically different than our own familiar way of life, however. The Native Americans did not have the comforts that we now take for granted; there was no electricity, running water, or even air conditioning! Nevertheless, the native people had a number of unique tools and techniques to help them survive for thousands of years.

Tools were made from the materials most readily available to early peoples. Settlements were often located close to tool-making resources, helping to insure the success of the village. As time passed, tools were used for more tasks and became more and more complicated.

Rope and Cord: In the second part of this activity, students will learn more about the process of making rope and cord. This tool was very important to the Native Americans as it served as a foundation for making other tools such as adzes, atlatls and even fire. Ancient people used both plant and animal sources to create their rope and cord.

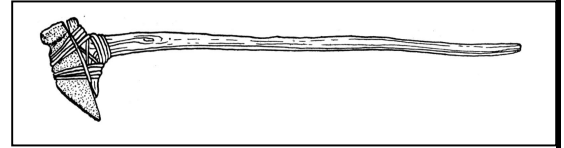
Fire Kits: Fire was an extremely important tool for the Native Americans. It could light the way at night, cook food, burn wood in order to hollow it out and even fire clay pots. It could also be used for hunting as fires could be set and used to drive animals out of the forest. Once the Native Americans learned to make fire on demand, their life became much easier. To do this, they used a sort of kit comprised of four separate tools. The fire kit would have included a **spindle**, **fireboard**, **handhold**, and **bow**. The spindle, a cylindrical piece of wood with points on both ends, was placed in between the handhold and the fireboard. Both the handhold and the fireboard were wooden and had small holes carved into them that would hold the upper and lower ends of the spindle. The bow, which looked like the common bow and arrow type bow, was about two feet long. The string on the bow was wrapped around the spindle so that the movement of the bow would spin the spindle. As the bow moves, charcoal is created in the form of a black powder. Next tinder such as the fuzzy brown fiber of the sabal palm would be added. Bowing would continue until smoke appears, and the tinder would then be picked up and blown upon until the tinder catches fire.



Atlatls: People lived in Florida at the same time as ancient mammoths and bison. In order to effectively hunt and kill these animals, the ancient people needed more than just spears. They developed a special tool called an atlatl in order to make their hunting more efficient. This tool was truly a revolutionary idea. It is a simple stick made of wood with a tip carved to fit into the end of a spear. The atlatl was held in the arm and actually served to lengthen the spear-throwing arm, allowing the spear or dart to be thrown farther and with much more power. Florida's ancient people used different lengths of spears, darts and atlatls depending upon where, and what, they were hunting.

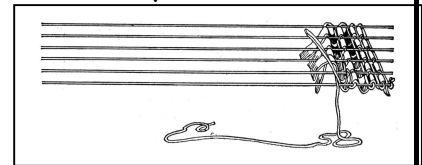


**Adzes:** The adze is a very versatile primitive cutting and chopping tool. It could be used for hollowing out wood to make bowls or even dugout canoes. It could be used to dig in the dirt like our modern hoe. The adze could also help chop off small branches and was often used to help shape and carve wood. The adze chopped wood vertically, chipping away at it, instead of horizontally like an axe. The adzes are comprised of a shaped cutting piece that is attached via sinew or fiber cord to a wooden handle.



**Hammers:** This hammer is made from a whelk shell. This type of shell is common in the local waterways and would have been regularly seen in use. Our replica would have had the hole in it chipped away with another piece of shell, or perhaps drilled with a shark tooth or stone drill piece. Sinew or palm fiber would have held the hammer to the wooden handle. Hammers had a number of uses including its common modern use. They could also be used as a cooking tool to tenderize the whelk meat found within the shell.

**Looms:** Florida's ancient people did not wear a lot of clothing. However they did develop a weaving process that utilized natural fibers, particularly those from the sabal palm. On their looms, they wove "cloth" for clothing, mats and bags. Many of these weaving were extremely detailed with lots of decoration and lots of thread, too! Looms were made from branches and palm fiber cord was used as the warp (this is the part of the loom around which you weave). The red fuzzy sabal palm fur was usually the material woven on the looms.



**Bags and Baskets:** The native people living at Emerson Point hunted and gathered their food. Food collection was a part of everyday life; everything from acorns to berries to roots and fruit were collected and it was necessary to have something in which to carry this food. At times the Native Americans also traveled far from their homes in order to trade for tools and materials with other villages. Here, too, it was necessary to carry goods to and from other places in order to trade. To protect and carry items, the ancient people wove baskets from many different plant fibers.

**Tool Materials:** Without the convenience of modern stores and supplies, ancient people relied on a wide variety of natural materials in order to make their tools. From plant fibers and wood to the bones, skin, teeth and antlers of the animals they hunted, the Native Americans wasted nothing.

**Stone:** There was surprisingly little use of stone in ancient Florida. We often picture arrowheads and spearheads as carved stone, but if these appear in local ancient sites they were often items that had arrived via trade with other places. The only stone commonly found was **chert**, a grayish white substance that was

usually carefully. It would be used for projectile points and stone drills. In the Emerson Point area, even chert was scarce, so the Native Americans used other materials, most commonly shell and bone, to create the tools that would have been made of stone.

Bone: After an animal was eaten, the bones were collected for use as tools. Some, like antlers, were sharp and could be used as knives. Sharp teeth, like those of sharks and the tusks of boars, were also used as knives and as points on spears and other cutting tools. Bones also became hammers, fishhooks and even whistles. Bone slivers and shards could be used as needles. Other pieces were carved and made into decorations or beads.

Skins and Hides: The hide or skin of an animal was very valuable to the Native Americans. Mammals and their thick coat of fur would provide an excellent blanket during the cold winter months. Deer hide could be turned into leather and made into many different types of clothing. Hunters could wear the entire deer hide as a cloak and use it to fool deer, allowing them to sneak up close to their prey. Even the internal organs could be useful; Native Americans used stomachs and bladders to make canteens.

Shell: Living so close to the water, the villagers at Emerson Point would have had easy access to a variety of different shellfish. From conchs to whelks to oysters, shells were readily available. It is no surprise, then, that many of the tools found at Florida's archaeological sites are made of shell. Shells could be used as bowls and containers. Flat pieces of shells could be turned into scrapers, adzes and hoes. Shells could also become hammers and even axes.

Fiber: Plant and animal fibers were very important to the Native Americans. Much of their clothing was made from woven plant fibers. Fibers were plied together to make rope and cord, the main method of holding together other tools. Plant fibers could also become fishing nets, baskets and bags, too.

Wood: Wood was another material commonly used by the Native Americans. Pieces of wood were used to create handles for tools, such as adzes, hammers and hoes. Trees could be chopped down and hollowed out to make canoes. And, of course, the ancient people often built their homes out of wood.

Clay: Florida's Native Americans used clay to create bowls, pots and jugs. Clay had to be dug up from the ground and was usually found near the banks of streams and rivers. Some areas, like Emerson Point, did not have a great deal of clay; the villagers had to travel in order to obtain it. Once obtained, clay could be left to harden in the sun. It could also be hardened in a fire, making the pottery much stronger and durable.

Suggested Procedure:

Split the students into teams of 3-4

Part One: Tool Examination

1. Begin this activity with a brief introduction about the types of tool materials available to Florida's ancient people. Discuss the different types of tools the Native Americans would need to survive. Ask students to imagine the types of materials that would be needed to create those tools. What might the native people have used? What sort of material would have been available, and where would it have come from?
2. Give each team a tool wrapped in hide or coarse woven fabric. The tools that will be examined are: 1 shell hammer, 1 stone adze, 1 shell adze, 1 fire kit, 1 atlatl and spear, 1 weaving loom and 1 woven bag and/or basket.
3. "Each group now holds a key to the past. In your bundle you will find a replica of a tool used by the Florida's first people. You will now become an archaeologist, a scientist that studies the people, societies and cultures of the past. Archaeologists ask questions, just like a detective would, to try and learn from the past. Can you think of the type of questions an archaeologist might want to use to study the past?"
4. "You are going to do a little detective work in order to learn about your tool. Your job will be to try and determine the type of tool you have and what it might be used for. How was it used? What was its purpose? Start by examining it closely. What can you tell from the way it's designed? Are there any clues that might tell you its purpose?" Remind students to work on their worksheets as they are examining the tools.
5. "Next take a look at the tool itself. The worksheet questions the composition of the tools - so what is your tool made of? How was it created? What types of materials were used? Where do you think the Native Americans would have found these items? Were they made, or would they have hunted or found them naturally?"
6. "Picture a Native American using your tool. How was it held? What do you think it looked like as it was used? Draw a picture of the way you think this tool was used. Get creative!"
7. Once the groups are finished, give each a chance to share their ideas. Have the students present their tool, their observations and conclusions. Allow the entire group to talk about the tool's purpose and guide the discussion toward the tool's actual purpose. If possible, then demonstrate each tool's correct usage.

## Part Two: Making Rope or Twine (if there is time)

For this activity, the students will remain in their teams. Each person will work together in order to help create the rope.

1. Begin by explaining that, in the Native American community, inhabitants had no nails, tape or glue to help hold things together so they often used rope. Ask the students to consider the tools they just examined and to think about the amount of rope found in each one.
2. "Native Americans did not just use rope and twine to hold things together. What else do you think they might have made out of rope or string? Living so close to the water, the ancient people of Emerson Point might have tied cord together to create fishing nets. They might also have used cord and a bone or shell hook to make a simple line and hook to catch fish. And what about clothes? What do you think these might have been made out of? Native Americans could certainly make cord and then weave it into clothing and bags."
3. "The Native Americans had a variety of sources for fiber, often utilizing local plants. The threadlike tan-colored fibers of the sabal palm were a favorite fiber. The trunk of the sabal palm also contains a fuzzy brown fur-like fiber that was also used to make cord. This type of fiber was especially good for making yarn that could be woven into clothing. Ancient people also used Spanish moss and even bark to make their cord and rope. They also used tendons, the connective fibers of animal muscle and bone, in order to make thread."
4. "We are now going to work together in order to make rope, just like the Native Americans created it. To do this, we will use fiber and twist it together in order to make our rope. The process of making this fiber is called plying. We will use raffia, a type of palm fiber, in order to make our cord."
5. Hand out the raffia to each group. One person will take on the job of holding the raffia while the other two partners work to create the rope.
6. Divide the raffia into two halves.
7. The other two students will each take a section of the raffia. Partner One will have the right side, and Partner Two will have the left. For the rest of the activity, Partner Three will hold the raffia.
8. Each partner should twist his or her section of raffia to the right. Tell the students to continue to twist until both sides are twisted very tightly.
9. The students should now pinch the bottom of each side tightly. This will keep the sections from unraveling.

Around the Bend Field Study Native American Technology (continued)

10. Next the team will create the rope itself. Partner One will wrap his or her side over the other section. Partner Two will wrap his or her side under.
11. Now the partners will trade sections and continue wrapping to the left, with Partner One always wrapping over and Partner Two always wrapping under. Each partner should hold their section very tightly until they have finished the rope.
12. When the rope is done, the students can let go of it. They've now made rope just like the Timucua Indians did!
13. Challenge the students to test their rope. Will it be strong, or will it break easily? Team members can tug on the rope to try and break it.

**Additional Resources:**

Blanchard, C. E. (1995). *New words, old songs*. Gainesville, FL: University Press of Florida.

Brown, R. C. (2003). *The crafts of Florida's first people*. Sarasota, FL: Pineapple Press, Inc.

Lamb, A. & Johnson, L. (2001). *42explore website: American Indians*. Links, websites, WebQuests and more.. [Internet database].

<http://www.42explore2.com/native.htm>

NativeWeb. (2004). *NativeWeb: Resources for indigenous cultures around the world*. [Internet database]. <http://www.nativeweb.org>

Osborn, T. (2003). *Teacher Oz's kingdom of history - Native American history and culture*. [Internet database].

[http://www.teacheroz.com/Native\\_Americans.htm](http://www.teacheroz.com/Native_Americans.htm)

Prindle, T. (2004). *Native Tech*. <http://www.nativetech.org>

Weitzel, K. G. (2002). *Journeys with Florida's Indians*. Gainesville, FL: University Press of Florida.

Florida Native American Timeline

<http://www.tampabayhistorycenter.org/1stpeople.htm>