

Polymer Synthesis

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Introduction:

This cultural unit will share what kind of glue or a resin that our ancestors used before it was called polymer synthesis.

Cultural Objective:

Students will learn how we tanned hides using the brains of a deer for the tanning process and how it made it soft.

Cultural Information:

The PPT presentation will demonstrate how our ancestors used all the parts of the animal for clothing, moccasin, and gloves. Later as time went along we developed a process to make other items we use today, which they learn from other cultures and also a story of how a pilot made glue from the moose hide and it was strong enough to withstand the tremendous forces that are put on a rotating propeller to get them home.

Polymers: “A substance that has a molecular structure consisting chiefly or entirely of a large number of similar units bonded together many synthetic organic materials using some kind of resin to make it useful.”

One of the methods used long ago was tanning hides and is a process of making leather from the skins of animals that otherwise would tend to decompose. The term comes from the word 'tannin' which is an acidic chemical compound that alters the nature of the protein fibers in the hide in such a way that they resist decay.

I am going to talk about leather, as this was traditionally one of our items long ago used for clothing, regalia, warmth, head pieces, and game pieces, such as balls, lacrosse sticks, and snow snake sticks. Ojibwe warriors used hide shields. Hunters also used snares which were made out of the lacing from hides.

In earlier times, tanning hides was an essential skill practiced by First Nations people across this continent. Before woven cloth was introduced by Europeans, animal skins were used for clothing, footwear, shelter and glue. The most common procedure involved soaking in some sort of emollient (oil compound), hours of scraping, and the addition of some sort of preservative or tanning agent. The tanning agents could be found in tree barks or other vegetative sources, but oily mixtures made from animal brains or fish oils were also used as preservatives.

Different types of tanning processes:

First of all, I am going to give a lesson in the different types of tanning process which are still being used today.

- Aldehyde-tanned leather: this is the leather that a tanner refers to as wet-white leather due to the pale cream or white color. It is the main type of “chrome-free” leather, often seen in shoes for infants, and in automobiles.
- Brain tanning is an ecologically sound and sustainable form of aldehyde tanning used by ancient civilizations around the world, including First Nations people on this continent. Brain tanned leathers are made by a labor-intensive process which uses emulsified oils, often those of animal brains such as deer, cattle, and buffaloes. Brain tanned hides are known for their exceptional softness and their ability to be washed.
- Chamois leather produces a porous and highly water-absorbent leather. Chamois leather is made using marine oils (traditionally cod oil) that oxidize easily to produce the aldehydes that tan the leather to color it.
- Rose-tanned leather is a variation of vegetable oil tanning and brain tanning, where pure rose Otto oil replaces the vegetable oil and emulsified oils. Rose-tanned leather leaves a powerful rose fragrance even years from when it is manufactured. It has been called the most valuable leather on earth, but this is mostly due to the high cost of rose Otto oil and its labor-intensive tanning process.
- Synthetic-tanned leather is tanned using aromatic polymers. This leather is white in color and was invented when vegetable tannins were in short supply during the 2nd World War. Melamine and other amino-functional resins fall into this category, as well, and they provide the filing that modern leathers often require. Example: White buckskin dress.
- Alum-tanned leather is transformed using aluminum salts mixed with a variety of binders and protein sources, such as flour and egg yolk. Alum-tanned leather is technically not tanned, as tannic acid is not used, and the resulting material reverts to rawhide if soaked in water long enough to remove the alum salts. Example: Painting.
- Rawhide is made by scraping the skin thin, soaking it in lime, and then stretching it while it dries. Like alum-tanning, rawhide is not technically “leather”, but is usually lumped in with the other forms. Rawhide is stiffer and more brittle than other forms of leathers; it is primarily found in uses such as drum heads and parchment where it does not need to flex significantly; it is also cut up into cords for use in lacing or stitching. Example: parfleches bag drumheads.

What is done with the rest of the materials long ago/story

- Small pieces were often sewn together to make a larger 'cloth' or used for fringe. Mothers also made small toys for their children from scraps of hide.
- Leftover leather would often be turned into glue. Tanners would place scraps of hides in a container of water and let them deteriorate for months. The smelly mixture would then be placed over a fire to boil off the water to produce hide glue.

- When people think of Ojibwa transportation they almost always think of canoes. Made from birch bark the traditional canoes were strong, light, and able to carry very heavy loads.
- Before we knew about the way of travel, prehistoric people used ships or canoes. These were constructed with leather to make the bottoms of their ships and canoes.

'In the 1940's, blizzard conditions forced a famous Canadian bush pilot by the name of Wop May, to land his plane on a frozen lake. The landing was so rough that the plane was toppled and the propeller broke. Fortunately, the pilot and his passengers were all bush men and knew how to create a shelter and hunt for food. They were lucky enough to kill a moose and weeks later flew home with the original propeller intact. They had made glue from the moose hide and it was strong enough to withstand the tremendous forces that are put on a rotating propeller."

Author biography:

Boozhoo, my name is Miigizi Ikwe, Wapski Makwa indoodem, Mikanock Wajii. My other name is Frances Allard, I'm from the Turtle Mountain Chippewa Reservation in Belcourt, ND. I am Anishinabe Ikwe (Ojibwa)/Cree/Mitchif and the eldest of 8 siblings. I have two sons, an adopted daughter, a foster daughter and an adopted grandson. I have seven grandchildren and one great-granddaughter. I raised two other young men as well; one lives here in Belcourt and the other lives in Colorado. My father was a marine, my mother was a beautician, and when I was a child, we traveled throughout the US/Guam/Japan before returning to the Turtle Mountain home of my parents in 1959 when I was 14 years old.

I have had a lot of educational experiences, both formal and informal. I graduated from Turtle Mountain Community High School in 1963; got an LPN degree in 1974 through the Lake Region Jr. College in Devil's Lake, ND and was trained in Belcourt; completed a BA in Communication/Dance in 1985 (Missoula, Mt) during the summers I worked as a woodland fire fighter; added an AA in Chemical Dependency in 1993 and an AA in Child Abuse/Neglect in 1994 from Lummi Community College (which later became Northwest Indian College) in Bellingham, WA; and then went back to TMCC for an AA in Commercial Art/Graphic Design in 2005; and picked up many certificates along the way. During those years, I was educated also by many Elders from different tribal nations and finally came home to Belcourt in 1995 and began my studies with all the Elders in the Turtle Mountains. I learned a lot and was honored to sit with them and learn from them. I also went to Canada to learn from the other half of my blood line, the Cree Nation. My travels took me across the US/Canada and across the ocean to Guam and Japan, learning many cultures along the way. The very first teachings I learned were the Seven Teachings of the Ojibwa, which came from my Aunt Edna Cloud who began this journey for me.

While I was in college, I learned to do research and found that very interesting. That training has become even more useful now that I am a board member of the Turtle Mountain Chippewa Tribal Nations Research Group, a board that reviews and approves all research done on the Turtle Mountain Chippewa Reservation. There are individuals from various universities who want to do research with our Turtle Mountain people, and the board

makes sure they are following the guidelines of the Tribal Nations Research Group. We are the protectors of our people in the research/data arena.

I learned to sew in high school and loved it. This is one of my gifts that I have. I design all of my regalia (the traditional clothing/accessories) that I wear for Ceremonies/Pow Wows/special occasions. Since I have moved home, I have designed and made regalia for my grandchildren and other young people as well as others who request it of me.

I am a Cultural Advisor for TMCC and ND EPSCoR. I work with 6-12 graders in ND EPSCoR NATURE camps during the summer months and ND EPSCoR NATURE Sunday Academies during the school year. I write cultural supplements for each of the STEM topics covered in the various STEM activities. If I am not familiar with a STEM topic, I do research on the topic so that I can figure out which cultural information fits best with it. This I have been doing for 22 years. I work for TMCC as an instructor, and was asked by the TMCC president and vice president many years ago to develop an archive for our artifacts by our people (clothing, tools, baskets, sculptures, etc.) for the college, which I did for 6 years. I am also currently working for the Turtle Mountain Chippewa Heritage Center for the last 3 years as an archivist/assistant for our artifacts and the tour guide to explain the historical way of life of our people here on the Turtle Mountain Chippewa Reservation. I also do research on various artifacts in our collection to find the importance/year/geographic origin of the items.

I realize that my passion is all about what I have learned and how to give back to our families, relatives, friends, and those who want to know who we are as Anishinabe people. I am grateful for the teachings of our elders, our young people of today and my children. I am also a sponsor for those who are struggling with alcohol/drugs on a one-on-one basis, as well in the sweat lodge. I work with the youth, adults, and the elders, outside this community in all four directions.

As I look at my journey throughout my life, my vision is to work with my people in any way I can to teach what I know, and pass it on to all that are interested in our Native way of life. I live simply so that I can live in peace and harmony in nature, which means I will follow the Seven Teachings in a good way. Those teachings came from my elders and I take the lessons they taught me seriously and to heart. So, my mission is to guide those who want the Seven Teachings in their life. The Seven Teachings are Love, Honesty, Humility, Bravery, Respect, Wisdom and Truth.