

SAP TO SYRUP

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by

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Abstract

Native people have faced a history of oppressive government acts that have attempted to destroy native culture and assimilate people. The Ojibwe children of today carry that battle with them, even in preschool, and the following synthesis of research shows that introducing tradition, culture, and Indigenous science in a place-based academic setting can help rebuild culture and language. St. Croix Chippewa Indians of Wisconsin has a Head Start program located on the reservation. This curriculum project was written to help the preschool children, Head Start teachers, and program introduce language and culture while experiencing the Ojibwe maple sugar harvest. This place-based environmental education curriculum project is a 5-day cross curricular series of lesson plans that is connected to Wisconsin and Head Start academic standards and ingrained in a critical pedagogy of place.

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Chapter 1

Introduction

Historical context: Native American Education

Native Americans walk in two worlds (Skyhawk, 2020), and both worlds can be found in the place of learning. These worlds are separate and unique, yet native people must survive in both. The native world teaches that attaining wisdom comes from several places. Elders and spiritual advisors teach lessons of values. The animals are the elder brothers who teach gentleness, courage, and keenness of vision. Silence teaches the knowledge of thinking before acting. The wind, water, and birds teach beauty and depth of music (Peacock & Wisuri, 2002).

This project will discuss the loss of traditional education and the curriculum as a part of the reclamation of traditional education. Sonny Skyhawk writes, “The full cost of mainstream assimilation for the American Indian has yet to be determined. Today, five hundred years later, we are still in the process of assessing what has been lost” (Skyhawk, 2020, para 1). To witness the ongoing battle of the Native person, one must first understand the history and trauma that followed. The Ojibwe children of today carry that battle with them, even in preschool, and the following synthesis of research shows that introducing tradition, culture, and Indigenous science in a place-based academic setting can help balance the two worlds.

Thomas Peacock and Marlene Wisuri discuss the First People Indigenous world in *Waasa Inaabidaa: We Look in all Directions*. Traditional education of Ojibwe children served two purposes: to build skills and to grow the spirit. These two concepts are ingrained in Indigenous traditional education, and to possess only skill without the knowledge of spirit is to live without purpose, depth, and meaning. People are lifelong learners in the Ojibwe tradition and there are three identified phases of learning. In modern terms, the first stage of “preschoolers” included

students up to age 7. These children, raised by grandmothers, aunties, and cousins, watched, helped, listened, and played. After age seven, the boys went with the men to learn the ways and skills of men, and girls went with women to learn the ways and skills of women. When one was ready, the third phase was the search for wisdom: learning the good way (Peacock & Wisuri, 2002).

Ojibwe perspective of place is rooted in relationship. They see themselves as responsible for this world as keepers of harmony and balance, as well as holding the collective spirit of places and ancestors before them. It is the responsibility of the adults to model this behavior to the young people, and therefore passing the knowledge on to the next generation. This traditional education was taught through observation, listening, stories, and eventually vision quests. Each time knowledge was asked, gifting of tobacco was used to create a give and take relationship between knowledge of humans, as well as the brothers which were animals and plants (Peacock & Wisuri, 2002).

Ojibwe traditional learning broke down with the colonization of Ojibwe Country and the effects of many treaties, Acts, and disease. One of the biggest triggers for breakdowns of traditional Ojibwe teaching was the boarding school era. In 1824, the Indian Civilization Act was passed to provide federal funding for the formal schooling of Native Americans. During this time, the use of language, culture, dress, and tradition were dismantled, and this helped to create today's levels of addiction, teenage pregnancy, high dropout rates, and high criminal sentencing among native people (Peacock & Wisuri, 2002).

After the civil rights movement of the 1960's, Native people began to rethink education. In 1970, President Nixon made a speech that encouraged Native Americans to set their own policy. This led to the passage of the Indian Education Act of 1972 and the beginning of tribal

schools and colleges (Peacock & Wisuri, 2002). Starting in 1968, the first of eventually 37 tribal colleges were formed around the country. Each of these tribal colleges and universities was created and chartered under their own tribal or federal government to provide higher education opportunities through programs that are locally, culturally, and holistically based (AIHEC, 2020). Early childhood programs have grown in tribal communities as well, filling the gaps missing in the Native community for education. These programs have placed child development within Native communities that draw on the Indigenous knowledge of the place (AICF Early Childhood Education, 2020).

Guiding Framework: Critical Pedagogy of Place

According to Gregory Smith, place-based education is learning to be where we are. Place-based education is a way to bring the local culture, environment, and community into the established curriculum of the schools to better relate to the students and their lives. Connecting the study of the culture and community with investigation of the area's physical and natural world, schools can create a way to solve real world issues through education. Place-based education can help students overcome the feeling of nature alienation and isolation by learning values through place and their local communities (Smith, 2002).

Critical Pedagogy is an approach to teaching that empowers learners and points out the oppressiveness of formal education, especially in western dominated societies. This approach comes out of critical theory and recognizes that emancipating marginalized people leads to transformation of their own conditions (Freire, 1968). This theory is particularly relevant for education in Indigenous communities, who have faced similar historic trauma and oppression.

David A. Gruenewald built on the lens of critical pedagogy and combined it with place-based education to create “Critical Pedagogy of Place.” He saw that these two approaches intersected through conscious awareness of people and place. The role of Critical Pedagogy of Place is to expand the scope of educational theories to include social and ecological contexts of those historically marginalized inhabitants. The research shows that formal classroom practices keep teachers and students isolated from the world outside of the school (Gruenewald, 2003). Introducing a Critical Pedagogy of Place through a curriculum designed with this theory and introduced within the St. Croix Tribal Head Start program creates a pathway of enriched Ojibwe teaching integrated into academic standards. Eventually traditional knowledge spills out into the community, helping people overcome alienation, isolation, and other trauma dysfunctions.

Current Ojibwe Educational Context

For the Ojibwe people, teaching uses the place as the classroom and gives room to find value in traditional teaching and cultural relationships. In recent times there has been a renewal of education practices created by self-determination and sovereignty. The implementation of language revitalization and cultural traditions are instrumental in these recently developed programs (Peacock & Wisuri, 2002).

Waadookodaading is an Ojibwe Immersion School located in Hayward, Wisconsin, on the Lac Courte Oreilles reservation. This school emerged in 2001 out of the evolution of the Indian Education Act of 1972 and uses tradition and cultural learning as its core. The school’s curriculum meets Wisconsin academic standards, but the instruction is given only in Ojibwemowin language and weaves culture into academics as its foundation (The School, 2020). The goal is to create “proficient speakers of the Ojibwe language who are able to meet the challenges of our rapidly changing world,” (Mission/Vision, 2020, last para). The school

became a community center for language revitalization, environmental awareness, and intergenerational relationships. The importance of learning the language is vital to the people. “In 1995, research found less than 500 fluent Ojibwe language speakers in the tri-state area of Minnesota, Wisconsin, and Michigan. According to a 1999 survey, less than 10 speakers remained within the Lac Courte Oreilles Reservation out of 3,000 community members” (Mission/Vision, 2020, first para). This successful immersion school that incorporates both Place-based teaching and Critical Pedagogy of Place is crucial for influencing the future of Ojibwe Culture, language, and is rooted in Indigenous science. It is also crucial for influencing neighboring tribes like the St. Croix Chippewa Indians of Wisconsin.

Lens of the author and curriculum developer

I am a non-native ally and work at Lac Courte Oreilles College St. Croix Outreach Site, within the St. Croix reservation. This project was a journey of relationship building through professional connections, networking within the community agencies, and personal friendships between me and the St. Croix Ojibwe community for 11 years. The goal in designing the curriculum was to understand the needs of the Ojibwe people, and establish a path forward through opportunities of language and culture reclamation, especially with the youngest learners of the Ojibwe community at the Head Start. I earned a B.A. in Elementary Education; as an educator, I understand my own strengths. I created this curriculum to provide the Head Start teachers the opportunity to guide students by using or adapting ready-made lesson plans, designed and drawn from the experiences and understanding of the St. Croix stakeholders’ aims. These lessons teach traditional activities like the harvest of maple sap through Indigenous science, which emphasizes the relationships between people and plants, while using academic standards, culture, and language. Relationships are the heart of this project. The curriculum

builds on the gifting of sap by the tree to the Ojibwe people through a reciprocal relationship. To understand the gift of the tree, one must understand How and Why? The lessons answer “How” and “Why” through Indigenous science, oral storytelling, and experiential learning in the place of the Ojibwe people.

Project Purpose

St Croix Tribal Head Start is a part of the St. Croix Band of Chippewa Indians, about 50 miles from Waadookodaading Immersion School. At the Head Start, three- and four-year-old children come from the families of the St. Croix tribal members and descendants who live in and around the reservation (Reynolds, 2020). The purpose of this curriculum project is to develop a place- based cross-curricular unit surrounding the traditional harvest of the sugar bush with the St. Croix Tribal Head Start. The unit development is guided by Critical Pedagogy of Place and Place-based education practices and integrated the local environment guided by cultural activities indicated by stakeholders of St. Croix. These are woven together into Wisconsin academic standards of learning, Head Start standards and environmental education standards, using a lesson model template surrounding the 5E’s of learning.

Definition of Terms

Place-based education (Smith, 2002), sometimes called pedagogy of place, place-based learning, experiential education, community-based education, education for sustainability, environmental education or more rarely, service learning, is an educational philosophy that describes learning about the place where you live while being in it.

Critical pedagogy (Freire, 1968) is a philosophy of education that views teaching as a political act. This philosophy focuses on issues of inequality such as social class, race or gender. At the heart of critical pedagogy is the idea that individuals can, in their own ways, transform the world into a better place.

Head Start is a federal program for preschool children three to five years of age in low-income families. Its aim is to prepare children for success in school through an early learning program. The Head Start program is managed by local nonprofit organizations in almost every county in the country.

Ojibwemowin is the language of the Ojibwe/Anishinaabe people.

Bimaadiziwin means living well or a healthy way of life in the Ojibwe language.

Chapter 2

Review of Literature

Overview

In the review of literature that follows, the components of relevant theories and studies that will guide the formation of the proposed curriculum will be described. Historic trauma and connections to critical pedagogy will be outlined. Critical Pedagogy of Place, Indigenous culture, language, and science, and inclusion of Indigenous people in decision making will be discussed. This will be followed by an examination of existing curriculum development that includes Place-based education and Indigenous cultural traditions. Finally, the connections between the ideas reviewed and the proposed Sap to Syrup curriculum for the St. Croix Tribe Head Start will be summarized.

Historic Trauma

Individual trauma affects a person, and so does collective trauma by a whole group. This collective trauma is called historic trauma and incorporates the idea that collective stressors and trauma from the past increases negative health and social outcomes generations later (Bombay A, 2014). In the United States starting in the 1870's, the federal government began sending American Indians to off-reservation boarding schools while the government was still at war with Indians. Richard Pratt, an army officer, founded the first of these boarding schools, basing it on an education program he had developed in an Indian prison. Pratt declared this statement, "A great general has said that the only good Indian is a dead one," Pratt said. "In a sense, I agree with the sentiment, but only in this: that all the Indian there is in the race should be dead. Kill the Indian in him and save the man" (Bear, 2008, para 11).

The U.S. government eventually operated as many as 100 boarding schools both on and off reservations. These children were rounded up, sometimes taken forcibly by armed police, bringing them to these boarding schools where they stayed for months. The curriculum focused mostly on trades, such as carpentry for boys and housekeeping for girls, rather than basic concepts in math or English, such as parts of speech or grammar. The reports were not positive: they found children beaten, malnourished, and forced to do heavy labor.

Not everyone had negative experiences at boarding schools. Some have fond memories of meeting spouses and making lifelong friends. However, too many abusive reports led to the final closure of most of the boarding schools during the 1960s (Bear, 2008).

In Canada, like the United States, residential boarding schools were used to educate First Nation children, but abuse, neglect, and disease were common. These schools dissolved cultural teaching and tradition (Bombay, 2014). The Ojibwe territory includes tribes that are now a part of Canada, and so it is important to know that Indigenous people there were treated similarly. Research looking at populations and generations of families along with literature on the subject, brought out three components of historic trauma. First, the event was widespread among a specific group; second, the trauma was enforced by an outgroup with intent to destruct the collective target group; third, the event created high levels of distress from the victim group. In addition, historic trauma continues to undermine the group, and responses to trauma continues to affect their wellbeing and creates risk across generations (Bombay, 2014).

Boarding schools in Canada ran from the 1880s through the mid 1990s. Statistics show that 75% of First Nations children attended boarding school by 1930. Children as young as three were forced to attend these schools, by Canadian law. The idea behind this was designed to “kill the Indian in the child,” (Bombay, 2014, p. 322). The schools taught children that their culture

was shameful and did not provide them with a proper education. A significant number of children went missing from the schools and were victims of abuse or sexual assault and chronic mental and physical neglect. This trauma continues to negatively affect wellbeing in future generations within this group, but surprisingly the victims did not completely lose identity and traditions of their culture. Rather, they continue to practice traditions as a protective factor of this trauma (Bombay, 2014).

Over generations, American Indian/Alaska Natives have experienced traumatic assaults that have continued consequences on individuals, families, and communities. These assaults included past traumas of community massacres, genocidal policies, pandemics, relocation, boarding school, and prohibition of cultural practice and religion. The consequences include communities suffering from violence, child abuse and neglect, and negative stereotypes that continue to undermine the communities (Evans-Campell, 2008).

Historic trauma is found to be the result of traumatic events, outside the normal range of stress that cause dysfunctional reactions. This research found that a result of historic trauma affects the individual and family, and the communities also faced dire effects including the breakdown of traditional culture and values. It was noted that a result of historic trauma in Indigenous communities was enhanced community ties and stronger importance on culture and tradition. This study found that some of the coping strategies for dealing with historic trauma included deep emotional attachment with others, holding traditional values, helping others, and focusing on the next generation. This research suggested that traditional cultural practices buffer the effects of historic trauma (Evans-Campell, 2008).

A research study that focused on healing trauma sought qualitative data from elder Native American participants to be used to help therapists and counselors working with Native

American clients. Previous research had focused on the healing coming from the advice of the privileged and experts of the psychology field, not on the traumatized. The participants suggested these four ways of healing: focusing on the positive, awareness and education, returning to cultural and spiritual ways of life, and learning language. Achieving wellness is interwoven with the culture itself and suggested to look within the tribe for guidance and development (Luna, 2015).

Most importantly, understanding historical trauma and dysfunction in power is important when creating a framework of change. The field of education is oftentimes overcome with bias and power dynamics weighted towards the dominant culture. Yet individuals and collective agencies of community have continued to thrive and pass along their knowledge, despite this power and damage. Learning how to create a framework that uses collaboration of groups, implementing design to break down imbalances of power, using learners in their place, homes, and communities, using these same voices to contribute to the curriculum, and to continue to self-reflect on this framework, are important keys of success (Learning in Places, 2020).

Understanding historic trauma is important in improving wellbeing and returning to cultural practices. Historic trauma research from this literature review has shown that teaching culture brings healing into a community, and guides agencies to enrich opportunities to provide this teaching. Critical Pedagogy of Place can be a framework designed in the community through opportunities of learning tradition, language, and indigenous science to walk successfully in two worlds. To heal, the trauma needs to be realized as oppression.

Critical Pedagogy

Paulo Freire (1968), the first director of the University of Recife's Cultural Extension Service, provided literacy programs to thousands of peasant people, teaching them not only

reading and writing but introducing them into the political process. He inspired the poor to find a voice in their life decisions. It was through this process that Freire developed the theory behind *Pedagogy of the Oppressed* (Freire, 1968). Freire defined oppressors as “those who deny personal autonomy of others by imposing a worldview paradigm onto the oppressed that denies them the power to direct their own lives” (Freire, 1968, first page second para.). There is a power structure within oppression as defined by Freire that is mirrored in educational structures that Indigenous people have encountered in the United States.

Freire describes Critical Pedagogy as having two stages. In the first stage, the oppressed realize their oppression. They reflect in this stage and commit to the act of transforming the world. In the second stage, the oppressed are no longer oppressed and the oppressors no longer oppress. The oppressed reclaim their humanity first by freeing themselves and then their oppressors from their own power. Freire’s action closes the gap between teachers and students. They become student-teachers and teacher-students (Freire, 1968). They are jointly responsible for learning and teaching. Most importantly, they do this growth in their own place, and become aware of the local people, culture, agencies, and politics to ensure this change and education of self and others. Like the students of Paul Freire, the Indigenous community members can become a place of change, advocacy, and a voice from within. Members can work with each other in their places to come out of the oppression and historic trauma and into their own seat at the table within agencies and politics, and showcase their identity of culture and tradition. This journey begins in preschool.

The Relationship between Place and Critical Pedagogy

Place-based education uses geography (the place), to create a learning environment that strengthens local connections (Smith, 2002). An environmental school called Teton Science

School uses five key place-based components to create a curriculum or program based on this framework: relevance, partnership, inquiry, student centered, and interdisciplinary design. These components help create a program that is grounded in the local community, partnering in the natural area as well as community agencies, developing student centered skills of questioning, hypothesis forming, data collecting, and developing solutions to create an outcome that is involved in interdisciplinary cross curricular topics (McClellen, 2016).

This Place-based Education idea has been woven by earlier generations and philosophers like John Dewey (1938). Dewey believed in a pedagogy of education moving from formal education into the practice of experiential education. This practice focused on individuality and created learning through experience instead of teaching out of textbooks. Dewey pointed out that children possess minds that are drawn to actual experiences rather than ideas of experiences (1938). These thoughts were shaped further by Gregory Smith with Place-based Education.

Place-based Education explores the local cultural and historical phenomena that directly connected students, their families, and the community into their learning experience. The students start with the familiar and then build on it. Educators might believe that classroom learning is connecting them to the real world, but what happens in classrooms is qualitatively different from what happens elsewhere. Smith refers to teaching as not the elimination of knowledge but the inclusion of the local. Teachers expand education to include regional, national, or international events or phenomena (Smith, 2002).

Place-based Education involves a series of approaches that benefit both the educator and the educated. Cultural Studies is included in place, so teachers and students take local cultural and historical phenomena directly into their own lives. Nature studies are included in the approach by exposing students to their local natural world in their own region. Teachers who

include studies of the natural world benefit from the student exploring their environment and discovering a child's curiosity. The students' experiences are valued, and the school was a part of that world rather than isolated from it. Real world problem solving engages students in the local school or community issues and brings it into the students learning. Internship and entrepreneurial opportunities help provide students the chance to think through the relationship between vocation and place, to keep students interested in staying in their communities rather than leaving after high school. Finally, the students are introduced into community processes through economic and decision-making. This turns schools and students into intellectual resources ready to be tapped by agencies to address community needs (Smith, 2002).

David Gruenewald connected the theories of Critical Pedagogy, which focused on the socioeconomic and oppression in education (Freire, 1968), and Place-based Education (Smith, 2002) to create a new framework called a Critical Pedagogy of Place (Smith, 2003). Critical Pedagogy of Place emphasizes the importance of place in education while also analyzing economic and political decisions that affect a place. Critical Pedagogy of Place creates a response against educational reform policies and practices that ignore place and its influence of politics and formal practices (Gruenewald, 2003).

Critical pedagogies challenge the assumptions, practices, and outcomes that dominant cultures create in formal education. These assumptions in education should support individualism and nationalism in the global economy or that competition of winners and losers is important to public life. Formal education has slowly taken on more standardization of academics and further advocated the western dominant culture. On the other hand, focusing on the pedagogy of place brings politics, economics, and cultural awareness to the place where people live, which trends even local into the global markets. Gruenewald (2003) argues that a

critical pedagogy of place attunes to the place where people live and responds to a reform of education and economics that disenfranchise the local and non-dominant culture. In education, the Critical Pedagogy of Place framework's goal is to challenge those educators who focus on teacher skills and student performance in standardization of learning that creates a greater obstacle to the minority culture. Critical Pedagogy of Place can reframe and include social and ecological contexts of people's lives in the area. The question is not whether to replace conventional learning but to add the question "What happened here" and "what will happen here", into the learning model (Gruenewald, 2003).

Place-based Education and Critical Pedagogy of Place are connected in traditional Indigenous education. The critical pedagogy allows the student, family, and community to be made aware of historic trauma that creates barriers of education and wellbeing, while at the same time integrating cultural traditions and teaching into the framework of place-based education. Teaching language, culture, and indigenous science within the framework of Critical Pedagogy of Place and the components of place-based learning has always been in the tradition of cultural teaching.

Bimaadiziwin is an Ojibwe word that means Living well or a Healthy Way of Life. To understand Ojibwe teaching, one must understand that the spirit world interweaves into the world of science and emotion. There is an interrelationship of the physical, emotional, and spiritual self, and this fundamental concept of Ojibwe teaching is a healthy way to live. The Earth provides as a mother to all life. Plants are used for healing, and animals are used for sustenance. The beauty of the Earth is a benefit of emotional and spiritual wellbeing. Whether a being is born, or it dies, there is a function for it living and a function for its body in death. The interconnection is understood for this way of life (Peacock & Wisuri, 2002).

Robin Wall Kimmerer discusses this traditional teaching of place from the perspective of two worlds. There is a difference in these educational structures. The western dominant science tradition creates hierarchy in nature, with the human being the most important. Indigenous tradition puts humans at the bottom (the younger brother), with the least experience and the most to learn, so the teachers are the other species of creation. The natural world is taught through stories. Sky woman is the first woman in the creation story. “I’ve heard Sky woman story told as a bauble of colorful folklore. But, even when it is misunderstood, there is power in the telling... something begins to kindle behind their eyes... Sky woman is not an artifact from the past but as instructions for the future” (Kimmerer, 2013, p. 9).

Tribal communities have this same understanding of place and teaching of cultural practices woven among the components of the place-based education framework. However, Indigenous people have a history of trauma and oppression that has affected their culture and community. Therefore, the Critical Pedagogy of Place framework is key in understanding the importance of teaching cultural practices of place within the framework of formal education and developing an appropriate curriculum for the people.

Examining Critical Pedagogy and Place-based Curriculum Approaches

Critical Pedagogy of Place has been an intricate framework in schools, communities, and cultures that create avenues of change. Critical pedagogy and place-based education have been tested in studies and shown to create results showing the “place” was instrumental in positive learning and change. This section will summarize some of that research.

In Australia, a study in the primary school used the local community agencies and schools to study children’s obesity, using pretests, posttests, and education over five years. The purpose of this research was to test a long-term community-based strategy to moderately change

the behavior, knowledge, attitude, and environment related to nutrition and physical activity with the “EAT WELL BE ACTIVE” campaign. Using questionnaires given to children, parents, teachers, and principals, the researchers tested if a multiyear strategy would improve health and lower childhood obesity. The findings revealed small changes within these categories, but also found that the environment, namely the school, impacted long term changes in philosophy which impacted teachers, then students, and finally parents. The place and local community were the biggest agencies to make long term changes in health (Magarey, 2013). When the place is the agency, the effect of learning seeps into the families, school and community as a whole, creating policy, and even teacher advocacy.

Funds of knowledge is a term coined to describe an education approach that considers and honors family strengths when designing curricula. The original ‘funds of knowledge’ study design included an ethnographic analysis within households, classrooms, and after school groups. This research used teachers as researchers and visited the homes of students in the community, finding that students gained their knowledge because of their history both individually and collectively (Moll et al., 2009). Just like critical pedagogy (Freire, 1968), the teachers became the students and were able to gather a larger understanding of what they needed to do to increase school learning and make changes to become better advocates and integrate family and cultural knowledge into their teaching.

Critical Pedagogy of Place approaches have been examined in preschool aged populations as well. Early childhood is a unique and valuable stage of human development because of the association with economic, social, and structural inequalities that can affect parents and the cultural values. The family of the child plays a deep role in the socialization of the child during early years. Children form their identity and build common understanding

during the early years and belonging to a culture is a basic need for people. This identity is woven throughout their participation in the social life of the community. However, identity can also be shaped by how other people define the child and how they are shown respect and values. Experience acts as a mirror for children's identities (Acar-Ciftci, 2016).

Awareness is influenced by culture as well. Children create the awareness of their culture through socioeconomics and social values in the early years. Positive and respectful multicultural environments are critical parts of classrooms and school environments since awareness, self-identification, knowledge of dominant groups, and biases are constructed during this period. The aim of the study was to determine the perceptions of preschool teachers regarding critical multicultural education competencies within the context of a model. This model was based on two theories: Critical Theory and Critical Race Theory. Researchers used this model as assessment of preschool teachers' understanding and awareness that teachers are agents of change. Several models were used to analyze teachers' responses of self-evaluation. The research found that teachers saw themselves as being aware but lacking in knowledge of multicultural education that they were teaching. They did not feel comfortable in their own teaching. The implementation of curriculum designed by communities and partnering with schools, like the framework of critical pedagogy of place, could help teachers have self-efficacy in their own teaching (Acar-Ciftci, 2016).

Another study showed that children learned better while at their own place of familiarity. Authentic student engagement and learning from experience was examined. This study used five standards: higher order thinking, depth of knowledge, connectedness of the world outside the classroom, substantive conversation, and social support. The standards serve as tools for teachers to use as their own measurement of success. This framework of standards was effective in

promoting wellbeing of students, teachers, and school community, and improved confidence, created purpose for learning, and built into the local community. Experience based learning was found to increase knowledge, attitudes, and positive behaviors, especially in primary students. Local areas were found to have an impact on student learning. This ‘in their own backyard’ feeling created heightened meaning for students and created a stakeholder place for them in local issues. “The most engaging effective and enduring learning experiences in the context of learning in natural environments occur through experience based rather than teacher directed strategies” (Ballantyne, 2009, p. 259). Experience based learning strategies gave the greatest benefits for environmental education and the best results when teachers integrate learning in the natural environment, alongside classroom learning strategies and partnerships, that continue to focus on experience in the life of the school (Ballantyne, 2009).

Connecting to Culture and Language in Science and Education

One important component of developing curricula that incorporated ideas of Critical Pedagogy of Place is honoring the students’ communities and culture. This section will describe how language, culture, and storytelling have been incorporated into early education.

Traditional Ecological Knowledge (TEK) was coined to describe Indigenous knowledge of science. This science may be accessed through elders, specialists, literature of TEK, and archived history. TEK tends to be place-based and local, much as western science is based on global expansion. Science education has explored what it means to prepare students for a culturally diverse world and teaching the importance of TEK can enhance appreciation and a deeper knowledge. Investigations show that children of culture interpret science concepts differently than the standard western science view. Teachers can begin by determining the base of students’ prior knowledge and incorporating it into instruction. Using this knowledge to push

forward into western science will keep the student from walling off knowledge when they feel threatened by conflicting viewpoints (Snively & Corsiglia, 2000).

Language. Culture based curriculum can motivate and create self-esteem in children, and studies suggest that culture and tradition are assets to student success. However, typically culture based curriculum is not integrated into academic standards but is taught separately. This “departmentalization” results in culture being taught only in a special class outside the academic areas. This was interpreted by students to mean they must choose to be Ojibwe or choose academics (Hermes, 2007). Interestingly, living in two worlds seems to be experienced by Native students when given the chance to learn culture.

From 1995 to 2000, the Navajo Head Start Immersion program created a preschool taught exclusively in the Navajo language. Understanding their history prior to implementing change was important in this curriculum. Navajo history told a familiar story of formal education for Indigenous peoples of the Americas. In 1868, the Indian Peace commission ordered schools to be established, children required to attend, Indigenous language extinguished, and English language spoken exclusively. Finally, the United Nations Declaration of Human Rights guaranteed parents the right to choose the kind of education they preferred. In 1992, the Declaration on the Rights of Persons Belonging to National or Ethnic Religious and Linguistics Minorities guaranteed that states protect cultural, religious, and ethnic identities. The Rough Rock Demonstration School opened in 1966 and was the first school to be governed by an all-Indian elected board. In 1983 Rough Rock School adopted a bilingual bicultural curriculum including culturally relevant topics of the Navajo tradition. In 1990 President Bush signed Public Law 101-477; this Title 1 Native American Language Act preserved, protected, and promoted the rights and freedom of Native Americans to use, practice, and develop Indigenous language

and their instruction for it. Early childhood programs were designed to serve parents and children with the intent of speaking a language other than English in the home. At Rough Rock, a thematic unit on place included a lesson on the colors associated with the four sacred mountains. The developers of the school believed child development was influenced by the world around them. After a few years of this curriculum development at the Navajo Head Start, the Department of Health and Human Services encouraged all Head Start programs to go forth with a similar research-based curriculum (Lockhard, 2010). Rough Rock School used community and agencies to partner and make change.

Ojibwe language is integral to the rituals of culture. “To understand the origin and nature of life, existence and death, the Ojibway speaking peoples conducted inquiries within the soul spirit that was the very depth of their being,” (Johnson, 1982, p. 7). The Ojibwe language can explain why we must respect the Earth and take responsibility for caring for the land, water, and its resources. It is the antidote to global climate change, environmental destruction, and unhealthy lifestyles. The Ojibwe language is where we turn for philosophy, history, science, medicines, stories, and spirituality. It is our university and the key to our cultural survival (Ojibwe Peoples Dictionary, 2012-2020). This cultural curricular development in language is important for influencing and expanding culture and tradition and it ties into environmental education. Cultural education is environmental education.

Indigenous language work is needed to construct place-based pedagogies. Language and places have evolved in communication between each other. The Indigenous languages evolved over thousands of years to interact between earth, humans, animals, and plants. It originates in relationships (Tuck, 2014).

Waadookodaading is an immersion school started on the Lac Courte Oreilles Ojibwe Reservation in 2001 starting with Kindergarten and then by 2005 had added on a new grade a through the 5th grade in 2005. Using Ojibwemowin as the language of instruction resolved the dilemma of the two choices between academic success or cultural success. Parent participation grew from public school of 40-70% to 90-100% at Waadookodaading (Hermes, 2007).

The Ojibwe nation are divided into 18 sovereign nations between the United States and Canada, and each government has their own structure and identity. Teachers in an immersion program need to be skilled in both language and pedagogy. Those proficient first speakers left on the LCO reservation were over 60 years old and served as classroom ‘helpers’, not main teachers for the classroom. Ojibwe reservations can be 100 miles apart from each other and using speakers from neighboring communities was a challenge. The curriculum was hands on, environmental and theme based. All academic subjects are taught through the Ojibwe Language except English. Teaching culture was infused throughout subjects rather than separated. Eighty percent of the teaching is delivered in Ojibwemowin, with a goal to get fifty percent of student responses back to the teacher in Ojibwemowin by the end of the year. The hope is after seven years of Ojibwe immersion, followed by public schooling with English immersion, the Ojibwe influence will be enough to remain sustainable (Hermes, 2007).

The Aboriginal Head Start programs in Canada studied the effects of combining culture and language in their Head Start programs. Research included a questionnaire completed by Aboriginal educators. These educators all spoke of the importance of culture and experiences they had in their childhoods but admitted that the children today are not connecting to tradition in the same way because of technology and less outdoor time. The need for a decolonizing education and learning Indigenous languages and knowledge was a prominent stance from the

educators. Literacy curriculum might be opened to include Indigenous knowledge, “reminding all students of this heritage and educating them in Indigenous thought within urban contexts, bodes well for transformative education that includes respectfully acknowledging and caring for land” (Peterson, 2018, p. 44). Classrooms across the country may be transformed through the creation of new stories that draw on and celebrate this heritage. Interviewing the Indigenous teachers in the classroom to their own exposure and knowledge of their trauma history as well as cultural history was documented (Peterson, 2018). It found that “Indigenous teachers' identity is inextricably intertwined with language use and cultural practices that help them to understand sacred roles and responsibilities in relationship to daily social, political, and ceremonial life” (Peterson, 2018, pg. 40).

Food. One aspect of culture is food, and food relationships can be connected into education. Food tells stories but also connects to science and tending to the earth. In early education, food is tangible, experiential. Manoomin is the Ojibwe word for wild rice, and a sacred food of the Ojibwe people. It means “good fruit.” It is the food of the Ojibwe prophecy that created the migration to the Great Lakes area, where the “food grows on the water.” Manoomin has been in decline because of environmental stressors including mining run off, water levels from both dams and draining of wetlands, invasive plants, climate change, and agriculture. To create a continuation of this sacred plant, collaborations with state and federal agencies and the tribe can develop a holistic solution rather than treating one symptom. This research focused on understanding Indigenous sovereignty, addressing past and present harms to build trusting relationships, continue a partnership in research, value Indigenous participation and knowledge, encourage an exchange of ideas, plan for protecting Indigenous data, prepare for institutional barriers, seek support from a diverse community of all ages, and be open to a different way of engaging with the world (Matson, 2020). Understanding the science behind the

continuation of this sacred food, emphasizes the need to expose preschoolers to their sacred foods within curriculum development and academic standards of learning.

Dream of Wild Health (Gould, 2018) was created in 1986, a long-standing Native organization in the Twin Cities area in Minnesota that introduced gardening to middle and high school aged students to create gardening, cooking, culture, and leadership skills. Framed in Critical Pedagogy of Place, this organization grounded youth and family in culture, history, and values. This heals the next generation of historic and generational trauma by restoring health of Indigenous places, and challenges injustices by creating knowledge, awareness, and action to better oneself, family, and community (Gould, 2018). Implementing curriculum and teaching of sacred foods into the schools and communities enriches cultural practices and well-being of the community.

Oral tradition. Another important aspect of culture is storytelling. Robin Wall Kimmerer (2013) discusses the importance of storytelling for Indigenous people. Stories “tell us who we are. We are inevitably shaped by them no matter how distant they may be from our consciousness,” (Kimmerer, 2013, p. 7). These stories are not instructions, but rather a compass to give orientation (Kimmerer, 2013).

Ojibwe stories relate people to their responsibilities as keepers of the natural world. Balance with the natural world is taught through stories and shares wisdom of relationship. “If we eat too many fish in one season there will be fewer fish to eat in the future. If we cut down too many trees, the land will become barren, and regrowth will occur with brush and trees of less usefulness” (Peacock & Wisuri, 2002, p. 44). This wisdom can be shared in an enriched cultural curriculum at school.

Judy Iseke (2013) brought Me'tis Elders together as collaborators examining stories, histories, and pedagogies of storytelling. The intentions of research were to respond to the needs of the Me'tis Elders' interpretations and representations. "Storytelling is a process that can be simple for children, with growing complexity for the more deeply knowing, and can be a powerful space for the development of knowledge and skills" (Iseke, 2013, p. 574). Indigenous storytelling pedagogies created a greater sense of identity, community, culture, and relations. This form of education enriched the community and created interconnectedness with family, community, and nation (Iseke, 2013). This example of reaching the community to support the creation of the framework of learning was a collaboration and partnership.

The book *Braiding Sweetgrass* argues for the addition of Indigenous thinking into western science. Kimmerer and her students discussed their love of the Earth. She then asked them if the Earth loved them back. The students were silent, until she asked them what the Earth would think of them if it loved them back. The students were able to acknowledge relationship and caretaking when they saw the earth sustainability as a two-way relationship (Kimmerer, 2013). This is the type of thinking that comes when stories are used in place-based learning.

Connections between Research, Theory, and the Curriculum Project

St. Croix Tribal Head Start is a great example of a place-based learning center, in which the people come from a disenfranchised past. Using the Wisconsin Early Learning Standards, the Head Start Early Learning Outcomes, and the Wisconsin Environmental Education Standards, this unit provides an academic curriculum framed using the 5E's of learning (Smith, 2017) while integrating cultural teaching and activities. Providing St. Croix Head Start with a cross-curricular unit of cultural learning and tradition provides the opportunity for formal education to right itself through place-based education framework and Critical Pedagogy of Place. This allows the

children of historic trauma from a boarding school generation, a chance to see education in a positive way and allow the school to further undo trauma damage through preschool and their families exposure to Ojibwe tradition and values.

Chapter 3

Methods

Introduction

Native Americans walk in two worlds. As outlined in the literature review, honoring culture and language, understanding collective historic trauma, and allowing the St. Croix Stakeholders to have a voice can allow St. Croix preschool children to learn their culture weaved into academic standards. Elders and leaders in the tribal community teach traditional education by passing along knowledge and continuing to seek partnership and guidance to bring a stronger community of place for Indigenous people. Using this cultural tradition that has been a part of Indigenous education and expanding it into state and federal standards of academics is an important strategy backed by research and theories of place.

Context

The St. Croix Head Start uses the School Readiness Policy and has built this policy with the Head Start Early Learning Outcomes Framework (ELOF) as a guide. The Head Start also uses goals provided by the Wisconsin Model of Early Learning Standards (WMELS) (Moritz, 2021). In addition, Wisconsin has its own Environmental Education academic standards that help structure and build into the Wisconsin Standards for Environmental Literacy and Sustainability (WSELS, 2021). The Sap to Syrup curriculum highlights the academic standards for the St. Croix Head Start to connect into their daily practice of School Readiness (see Table 1). The curriculum was designed to highlight the Environmental Literacy standards in lesson plans framed by the 5E format (Smith, 2017). The curriculum will make use of both indoor classrooms as well as natural areas near the playground.

Critical Pedagogy of Place emphasizes teaching cultural traditions to create knowledge and advocacy of cultural education within the school and community surrounding it. By creating more opportunities to teach culture in the preschool, the tribal community can become more engaged, create positive wellbeing, and can expand use of cultural practices throughout the community.

With the Sap to Syrup curriculum, formal and informal education are bridged through the Sugar Bush cultural tradition. Teaching math, literacy, and science through a traditional cultural tool, builds skills, practice of tradition, and lessons of knowledge and awareness within the formal objectives of the curriculum subjects.

The cross-curricular unit “Sap to Syrup” connects culture and academic requirements. In order to determine the components of the curriculum that were most important, interviews were conducted with members of the community and the Head Start. St. Croix stakeholders voiced a need for the cultural traditions that could be enriched using Critical Pedagogy of Place as a framework. This curriculum connects the Head Start preschool with both the community’s funds of knowledge, as well as the needs identified by the Head Start.

Needs Identified by Stakeholders

St. Croix Tribal Head Start is a part of the St. Croix Band of Chippewa Indians of Wisconsin. St. Croix Chippewa Indians of Wisconsin is composed of approximately 1054 tribal members. The tribal membership consists of a blood quantum of half of St. Croix bloodline. This means there are just as many descendants (less than half blood quantum) of St. Croix living and working in the St. Croix reservation community. The reservation is a checkerboard of land and spans over three counties for a total of 4689 acres (Connor, 2020).

St. Croix operates a Head Start program for Native American and non-Native American children and it is funded from the federal Head Start Bureau (Connor, 2020). The mission statement says, “To care for and educate children in a positive and encouraging learning environment reflecting Ojibwe culture where children and families feel safe and respected.” At the Head Start, three- and four-year-old children come from the families of the St. Croix tribal members and descendants who live in and around the reservation. The Head Start has a program director, and the organization’s bylaws are overseen by a parent committee. The St. Croix Head Start is a part of the St. Croix Education Department and falls under the St. Croix Tribal Council review (Reynolds, 2020).

Karen Washington is the St. Croix Education Director and administers the staff of the St. Croix Head Start, the Native American Home School Coordinators in the six public school districts that fall in the reservation areas, and Cultural Coordinators in the three communities of St. Croix. The Title 6 grant administers the Indian Education program and this grant funds each school district with a Home School Coordinator that has at least ten percent of Native American students. These coordinators give students in the public school an adult mentor they can relate to and can find their identity in the school. The coordinators help the students to become academically, emotionally, mentally, and culturally successful. This creates a community difference (Washington, 2021). The students that are in the public school first came into their public education as preschool students of the St. Croix Tribal Head Start.

Karen explained that curriculum in the Head Start focused on Native tradition is important in the beginning years when children develop quickly. She expressed the importance of practices as simple as gathering sap and learning stories and Ojibwe words that create life lessons in manners and spiritual guidance. These lessons create daily habits at the Head Start.

When students' homes may not teach them these cultural practices, the school in the reservation community can fill the gap. These practices, like laying down tobacco (asema) and teaching students to speak during ceremonies in Ojibwemowin, are important. Karen said, "Our students are missing these daily habits that once were a part of every day and now we have depression and anxiety in our young people," (Washington, personal communication, 2021). The Head Start would benefit from having a curriculum to guide them, especially when teachers may not be native, or may not understand native tradition. Teachers in the Head Start do not have training in special education, in trauma training, or in cultural training (Washington, 2021). There used to be a cultural coordinator at the St. Croix Head Start as a full-time position, but the position has not been filled for several years (Reynolds, 2020).

Mark Soulier is the Director of the St. Croix TRAILS youth program. Mark believed that pushing language in the preschool is the most important way to retain language. He stated that starting to hear and speak Ojibwemowin as young children will help them grow and retain the language. Mark believed that everyday Ojibwe should be spoken, pushed every day, and practiced (Soulier, 2021).

Terri Moritz (2021) was the Program Director for the St. Croix Head Start from August 2012 to 2018. Terri made sure that the Head Start participated in traditional activities like regular pow wows, cultural feasts and she also worked hard at trying to staff a cultural coordinator to be in the classrooms on a regular basis. Terri created gardens and play areas that were culturally connected and hands-on for the students. There are barriers to improving the school to make it culturally appropriate, including a lack of consistency in including traditional ways. She also discussed a barrier of welcoming elders and other leaders to share knowledge, as it takes a dedicated person to continue to invite them. She believes that becoming more hands-

on and purposeful in preserving tradition is also an internal problem. While at the Head Start, she had the classrooms practice laying down tobacco with the kids, only to learn that staff members were upset with how it was done, and who should lead it. This led to dropping the practice entirely (Moritz, 2021). Sometimes, the cultural act creates disagreement which brings on another barrier, this time an internal disagreement. Having the opportunity to follow a curriculum with these practices embedded may allow the teachers to not feel more comfortable knowing that the practices were being followed consistently.

COVID-19 became another barrier for Native people during the development of the curriculum. Georgia Cobenais works for the St. Croix Education Department and discussed the effects of COVID on tribal nations. St. Croix lost one fluent speaker to COVID, and fortunately another diagnosed with COVID survived. Other tribes lost several speakers. “Losing a speaker is like losing all the history of all the speakers that came before him. Losing a speaker is losing history. The speaker we lost was also a drum keeper, so it was not just a speaker, but drum keepers are interwoven throughout the Ojibwe communities near and far. Ceremonies and rituals were put on hold because a speaker is gone and there is now a void, in not just our community but all that were affected by ceremony” (Cobenais, personal communication, 2021).

COVID-19 also created hope. Because of the loss of elders and speakers, it created a feeling of responsibility in the next generation to learn language, and for those that know language to speak at ceremonies and continue to build on language. Tristin Oustigoff, the St. Croix Cultural Coordinator, said, “sitting with an elder to gain knowledge, taking language classes, and working to take on the responsibility of being a speaker, the time is here, for this generation. The next generation has felt that they had more time, and now they feel responsible to step up” (Oustigoff, personal communication, 2021).

St. Croix Tribal Head Start is the place to start with new speakers, introducing words and phrases that will be built on later. Touching on language through the St. Croix language programs or public-school programs including after school or summer school for elementary and middle school age children, and then given the chance to take the language again in high school as a foreign language choice, eventually to take it in college, is how the next speakers are developed (Oustigoff, 2021).

Design of the Curriculum

The Sap to Syrup curriculum was developed to lead up to the traditional activity of harvesting sap. Depending on the spring, this might take place in March or early April. There are five days of a themed unit that includes a lesson in science, math, and literacy each day, lasting about 20 minutes. The lessons are individual subjects, so that they can easily come apart or be connected by the classroom teacher. As individual lessons, they are more adapted to flexibility. These lessons can be used within the public-school districts as subject area lessons to adapt or use as designed. Many of the local school districts already do activities with the Sugar Bush and are excited to use lessons that connect academic standards and cultural traditions of place.

Each day the class learns new Ojibwe words and also repeats previous words, to help students become more and more familiar with language. Lessons contain Ojibwe words, a traditional story, laying down of tobacco, and a hands-on experience working at the sugar bush. Tapping a tree, carrying buckets of sap, boiling syrup, and tasting the final product teach the cultural tradition and practices while supporting language development. Finally, the curriculum design is wrapped in place-based education, the place of the Anishinaabe people.

Indigenous science connects culture and science together. The connecting theme in the lessons is relationships. The relationship between adult and child and between the child and nature are emphasized. The giving of tobacco daily, which teaches students to ask permission to the Earth and show gratitude for gifts, is a symbol of these relationships. The relationship between plants and people and the interconnectedness can be found in language, cultural practices, and TEK in academic lessons. The students will be able to answer how and why questions during the unit Sap to Syrup.

Academic Standards

Table 1 outlines the Wisconsin Model Early Learning Standards (WMELS), Head Start standards called Early Learning Outcome Framework (ELOF), and the Wisconsin Environmental Education (WSELS) standards that are connected to the curriculum.

The 5E Learning Cycle has been an effective model for decades in elementary classrooms. This model was used to guide the development of the curriculum. The five steps are engagement (curiosity), exploration (interaction), explanation (discussion), elaboration (application) and evaluation (assessment). Research points to the effectiveness and constructivist roots that build on a student's prior knowledge and experience (Smith K. C., 2017).

Each day includes both an indoor and an outdoor time for learning. There will be Ojibwe Language, Ojibwe culture practice, and Ojibwe oral stories interwoven throughout each day of the unit. Each day includes a focus on the senses, on the steps and tools of the Sugar Bush.

On the last day, the students are sent home with a classroom book, written in Ojibwemowin and with room for their story of pictures, to remind them of their day at the Sugar Bush. This book includes sensory questions to process the experience again each time the book

is read. The book is sent home to families, to read together, practice oral language, and continue the Sugar Bush tradition.

Table 1. Alignment of “Sap to Syrup” unit with standards and needs identified by community.

Day and Sensory focus	Subject/ Topics	WMELS	ELOF	WSELS	Traditional practices and language
Monday Taste	MATH: Maple leaf shape, number 2 Literacy: reading, drawing, and listening Science: Parts of a tree	B.EL.1 B.EL.3 C.EL.1 C.EL.5 C.EL.3	Goal P Math 1 Goal P Math 3 Goal P LIT 5 Goal P-ATL 8	Standard 1 Standard 2	Count in Ojibwe Story: <u>A Tree is Nice</u> Laying of tobacco
Tuesday Sight	MATH/ shapes, number 5 Literacy: reading and listening Science: story	B.EL.1 B.EL.3 C.EL.1 C.EL.2 C.EL.5	Goal P Math 1 Goal P Math 3 Goal P LIT 5 COG 8	Standard 2 Standard 5 Standard 7	Count in Ojibwe Story: <u>Foxsong</u> Laying of tobacco
Wednesday Hear	MATH/ shapes, 2 and 5 Literacy: reading, writing, and listening Science: measuring sap	B.EL.1 B.EL.2 A.EL.2 C.EL.1 C.EL.5	Goal P-ATL 8 Goal P Math 3 Goal P Math 8 Goal P LIT 5	Standard 2 Standard 7	Count in Ojibwe Story: <u>Ininatig's gift of sugar</u> Laying of tobacco
Thursday Touch	MATH/ adding and subtracting. Literacy: reading, speaking, and listening	B.EL.1 B.EL.3 C.EL.1 A.EL.1d A.EL.2	Goal P Math 1 Goal P Math 3 Goal P LIT 5 Goal P PMO5	Standard 1 Standard 2	Count in Ojibwe Laying of tobacco
Friday All senses	Making a book	A.EL.1	Goal P ATL 7	Standard 1	Sugar Camp

Chapter 4
The Curriculum

SAP TO SYRUP

A 5-day curriculum unit for early childhood wrapped in
Ojibwe Culture and Language



Ojibwemowin

Maple Leaf. **Ininaatigobag** (In-in-a ah-tig-oh-bug) This refers to an oral story and means man leaf.
Maple Tree. **ziinzibaakwadwaatig** (zeen-zih-baah-kwad-waaj-tig) Sugar tree
Maple Syrup. **ziwagamisigun** (zhee-waah-gum-ih-zig-un)
Sugar. **Ziinzibaakwad** (zeen-zih-baah-kwad) Adding Anishinaabe before this word means just Maple sugar rather than regular sugar.
Sap. **Ziinzibaakwad waboo** (zeen-zih-baah-kwad-waa-boo) Sugar water
Birch Tree – **Wiigwaasimitig** (Wee-gwaahs-i-mit-ig) Wiigwaasi is just Birch and **Mitig**-Tree.

Tools

Tap -**Negwaakwaan** (Nay-gwaah-kwaahn)
Bucket – **Akik** (Uh-kik)
Drill – **Bagone’igan** (Bug-oh-nay-ig-un)
Fire. **Ishkode** (Ish – Koh- Day)

Sugar Camp. **Iskigamizigan** (Is-kih-gum-iz-ih-gun)
Thank you. **Miigwech** (mee-gwaych)
Spring. **Ziigwan** (zeeg-waan)

Tasks of the Sugar bush

Bagone’ige	(Bug-oh-nay ‘ ih-gay)	He/She is drilling
Agoojige	(Uh-goo-ji-gay)	He/She is hanging something
Ozhiga’ige	(Oh-zhih-guh-igay)	He/She is tapping a tree
Naadoobii	(Naah-doo-bee)	He/She is hauling something

Numbers

1. **Bezhig** (Bay-zhik)
2. **Niizh** (Neezh)
3. **Niswi** (Nis-wih)
4. **Niiwin** (Nee-win)
5. **Naanan** (Naah-nun)
6. **Ningodwaaswi** (Nin-go-dwaahs-wih)
7. **Niizhwaaswi** (Neezh-waahs-wih)
8. **Nishwaaswi** (Nish-waahs-wih)
9. **Zhaangaswi** (Zhaahn-gus-wih)
10. **Midaaswi** (Mid-aahs-wi)

To get help with pronunciation... <https://ojibwe.lib.umn.edu/>

The Ojibwemowin words chosen for this Sap to Syrup unit are meant to use throughout the day, as repetition and daily habit, the lessons are a reminder of that. It is meant to be teacher led and modeled. This part of the curriculum of learning Ojibwe language was declared as vital, according to the tribal elders and leaders. Become comfortable with the language and teaching, as they go hand in hand. The preschoolers will go into their elementary years with a base of language knowledge, to be touched on further as the child grows thru public school, family and community.

SAP TO SYRUP

Day 1 Lessons

Sensory focus: Taste

Theme: The Tree

Cultural Relevance and Academic Connections:

The Day 1 lessons introduce the students to the identification of the maple leaf and parts of a tree. There is a focus on practicing daily repetition with Ojibwe numbers and to start the week by counting to 10 in Ojibwe specifically practicing the number 2. Choosing the number 2 focuses students on the identification of the written number while hearing the number 2 in Ojibwemowin. This helps match language to the number. Maple Leaf counters are made this day out of a maple leaf coloring page and then cut out. These leaf counters can be a teacher led prop used all week with counting to 10 in Ojibwe and adding and subtracting the leaf counters. It also gives a daily reminder of how to identify a maple leaf.

The tree will be focused on, using the language of the sugar tree as well as identification strategies, such as comparing the maple leaf to the child's hand. Learning the parts of the tree in a simple way and acting out what the role is for the parts of the tree. Even though this might seem like a high-level activity, it is vital to understanding where the sap comes from as later in the week, the students will hear the Traditional Stories of the gift of Maple Sugar. Teachers can modify parts of this lesson to how they think their class will be able to be successful. The prior knowledge of the tree and the function of the sap will give students an understanding to begin to merge Indigenous science and western science together answering How and Why. The students taste both sap and syrup to tell the difference in flavor. This helps with prior understanding for the Ojibwe Oral story. A daily practice of laying down of tobacco will occur.

The book in this first day lesson is *A TREE IS NICE*. The story will help students gather examples about how trees are used and will expand knowledge of Ojibwe Sap to Syrup and the cultural use and gift of trees to and for Ojibwe people.

Each day, students will spend time outside. Outside time will include both free play and guided exploration; guided explorations connected to each lesson are found under the "elaborate" section. An extension activity is to find real maple leaves to use as math counters, however, this time of the year is filled with snow, and finding leaves could be difficult.

Sap to Syrup Math Day 1

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS	B.EL.1 Demonstrates an understanding of numbers and Counting.
	B.EL.3 Explores, recognizes, and describes Shapes and Spatial Relationships
ELOF	Goal P Math 1: Child knows number names and Count Sequence.
	Goal P Math 3: Child understand the relationship between numbers and qualities.
WSELS	STANDARD 1: Students develop and connect with their sense of place and well-being through observation, exploration, and questioning.

Objectives: Upon completion of this lesson, the students will be able to:

- color and describe the shape of a maple leaf,
- write the number 2,
- count in Ojibwe 1-10
- taste maple syrup and sap
- observe and explore leaf shapes

Materials for prep: Worksheet- maple Leaf, Worksheet- number 2, color crayons, jar of syrup, jar of sap, and pictures of different types of leaves (including maple leaf), tiny tasting spoons for each student

Lesson Procedure

ENGAGE: Have the students sit on the classroom rug and face the teacher. Bring out 2 jars. One jar has a clear liquid of maple sap. One jar has a dark liquid of maple syrup. Have students taste the difference. Ask questions about the difference they see and determine what students already know.

EXPLORE: We will learn about how to get syrup from Maple trees this week. Ojibwe people need to know how to identify a sugar maple. Place random leaf pictures all around the room. Choose students to find them and bring them to the group. Help students identify which leaf is maple leaf. (Ininaatigobag) Teach the word in Ojibwe

EXPLAIN: Hold up a number 2. What number is this? How do you say it in Ojibwe? Niizh On your desk is a number 2. On your desk is a Maple Leaf. Trace the number 2. Then color the maple leaf. Hold up your hand in the air and spread your fingers out. Trace along your hand with a finger. In between your fingers is a lobe. The hand looks like a maple leaf. Maple leaves have lobes. Trace your finger around the lobes of the maple leaf that you colored.

ELABORATE: Sometime during the day, students will have time outside. Pass out a pinch of tobacco to each student and line up to go outside, as it is customary in Ojibwe culture when asking for things or giving thanks. Each student will follow each other and lay tobacco at the Medicine Rock. Have the students say Miigwech Ininaatigobag.

Outdoor exploration prompts: Can you find a maple leaf on the playground, under the snow? Look for the lobes of the leaf.

EVALUATION Collect the student-colored maple leaves to be used to count. Count to 10 in Ojibwe using the Maple Leaf colored counters. Observe students and encourage everyone to count. Time to taste a small amount of sap and syrup from the jars.

Sap to Syrup Day 1 Literacy

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS	C.EL.1 Shows appreciation of books and understands how print works. C.EL.5 Uses writing to represent thoughts or ideas.
ELOF	Goal P LIT 5 Child asks and answers questions about a book that was read aloud
WSELS	STANDARD 1: Students develop and connect with their sense of place and well-being through observation, exploration, and questioning.

Objectives: Upon completion of this lesson students will:

- draw a picture of a tree's usefulness after reading *A TREE IS NICE*
- speak the Ojibwe word for Maple tree (ziinzibaakwadwaatig)
- role play as animals using a tree for a home

Materials and Prep: A TREE IS NICE by Janice May Udry, worksheet of tree, color crayons, variety of tree fruits, seeds, and nuts including the maple tree seed

Lesson Procedure:

ENGAGE: Students share a story of a favorite tree or a favorite tree spot in their place (home memory)

EXPLORE: All around the room place different fruits, nuts and seeds from trees. Students then are asked to find them and bring them back to the teacher. Students can try to identify which fruit, seed, nut goes to each tree. Reinforce: A maple tree has a HELICOPTER type seed.

EXPLAIN: Read the story *A TREE IS NICE*. Discuss different ways trees are used for people and animals. Back at the student's desk place a worksheet of a tree. Have students draw a picture of a tree's usefulness.

ELABORATE: During outside time, each student finds a tree. Outdoor exploration prompt: pretend you are an animal, looking for a home. What kind of animal are you? How can the tree help you?

EVALUATION: Share picture stories with each student and practice Ojibwe words.

Sap to Syrup Day 1 Science

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS	C.EL.3 Uses various styles of learning including, verbal/linguistic, bodily/kinesthetic, visual/spatial, interpersonal, and intrapersonal.
ELOF tasks.	Goal P-ATL 8: Child holds information in mind and manipulates it to perform
WSELS	Goal P-ATL 11: Child shows interest in and curiosity about the world around them. STANDARD 2: Students evaluate relationships and structures of natural and cultural systems and analyze their interdependence.

Objectives: Upon completion of this lesson the student will be able to:

- act out the parts of the tree when given the name
- create the sound that correlates with what that part of the tree does for its job.
- Identify some parts of a tree on a real tree

Materials: A tree cookie (Slice of a tree to show rings)

Background Information: Students will be introduced to the Sugar bush in Mondays Science class by introducing the parts of the tree to the student. Inside the tree is where sap is running and being collected in the harvest. Parts of the tree that will be introduced are root, bark, vessels, and heartwood. Students will hear about the parts of the tree that carry the sap.

Preparation: Have ready a tree cookie for presentation

Lesson Procedure:

ENGAGE: Show students the tree cookie and have them touch it, smell it, look at it.

EXPLORE On the tree cookie are the parts of the tree. How many rings are there? What colors are there?

EXPLAIN The bark is the outside, the inside hard part is called the Heartwood, and the rings are two colors, dark and light. There are tubes in the tree that carry water and food. There are roots of the tree underground. Each of these have a special job.

Practice making the sounds of each part together.

- The Heart wood holds the tree so its strong, like a heart is strong. Make a heartbeat sound and beat your heart with your hand. (boom, boom boom).

- The tubes carry the food (sap) down the tree in the summer from the leaves, and up the tree from the winter from the roots. (say YUM YUM YUM and pat your belly)
- The Roots suck water up like a straw. (Make sounds like a straw slurping)
- Bark is on the outside protecting the tree like a guard dog (say BARK BARK BARK)

Now practice. Teacher names a part of the tree, and the students do the action. Practice until the students have succeeded.

ELABORATE: During outside time, have students find a tree. Point to the bark, roots, heartwood. What are the parts of the tree on the inside that are not visible?

EVALUATION During outside time ask questions. Which part of the tree carries the sap? The Tree vessels. We must drill a hole into the bark to get the sap.

SAP TO SYRUP

Day 2 LESSONS

Sensory focus: Sight

Theme: The tools

Cultural Relevance and Academic Connections

The Second Day lessons introduce the Sugar Bush tools to the students. They use and see these tools in each lesson. The number 5 will be focused on in math. This gives a visual written number to the Ojibwemowin word.

The book *FOX SONG* describes a story of a relationship of an elder and a child and includes connections to Birch bark. Birch is shown to the students. The leaves and the bark are compared, and a birch basket will be admired and shared. The Ojibwemowin words for birch are introduced and practiced. A birch bark activity shows how the birch could be used for paper. The sensory focus is sight, which is used to identify tools of the Sugar bush and to create a bark rubbing to help identify trees.

A very simple introduction of photosynthesis with legos can be led by the teacher. This lesson shows the students that trees make their own food and give us some of their food. The *Fox Song* book, the lessons, and the teacher emphasize the relationship of gifting between trees and people.

Finally, an oral story will be told about the maple tree to answer the questions of How and Why. Use this story together with Indigenous science to help make sense of the process plants use to make food.

There is daily practice of Ojibwemowin and daily laying down of tobacco at the medicine rock. Teachers will guide students to say Miigwech and practice another sugar bush word during this daily tradition.

Sap to Syrup Day 2 Math

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS	B.EL.1 Demonstrates an understanding of numbers and Counting.
	B.EL.3 Explores, recognizes, and describes Shapes and Spatial Relationships
ELOF	Goal P Math 1: Child knows number names and Count Sequence.
	Goal P Math 3: Child understand the relationship between numbers and qualities
WSELS	STANDARD 2: Students evaluate relationships and structures of natural and cultural systems and analyze their interdependence.

Objectives: Upon completion of this lesson the students will

- draw a line from the circle, square, and triangle shape to the Maple Bush tools.
- Trace the number 5
- Count maple leaf counters 1-10 in English and Ojibwe.
- go outside to the playground with the tools of the sugar bush to see where the tools would go on the tree to collect sap.
- find shapes in nature.

Materials and prep: Example of a birch bark basket used traditionally to collect sap To show to students. Each child needs a tracing 5 worksheet and the matching the shape worksheet.

Lesson Procedure:

ENGAGE: When Maple Sap comes out of the Maple tree, how do we collect it? What are some ways we could collect it? (buckets, bags...) I am going to show you a birch basket that was used by the Ojibwe to collect sap. Some people still use baskets like this, others may use buckets or bags to collect. Practice the Ojibwemowin for birch.

EXPLORE: Around the room are placed tools of the Sugar Bush. Students collect them and bring them back. Show pictures of a circle, triangle, and square. Now show the tools. Share the Ojibwe names, and practice them. See if they see what shape the tools are.

EXPLAIN: Now look at the worksheet for finding shapes. Show the pictures of all the tools in the Sugar Bush. At the top are a circle, triangle and square. Go through the pictures and have students draw a line from the circle to the items in Sugar bush that look like circles. Do the same for square and then triangle.

Practice the number 5. In Ojibwe the number 5 is naanan. Can you repeat the Ojibwe name?

Practice tracing the number 5 on the worksheet.

ELABORATE: Before outside time, pass out a pinch of tobacco to each student and line up for outside. Each student will follow each other and lay tobacco at the Medicine Rock, as it is customary in Ojibwe culture when asking for things or giving thanks. Have the students say Miigwech Ziinzibaakwadwaatig while they lay down the tobacco. Bring students to a tree with the tools of the sugarbush. Practice Ojibwe names of sugar bush tools and where on the tree each tool is used. Look for shapes in nature.

EVALUATION: Students find their spot on the carpet and practice with the maple leaf counters and count 1-10 in English and Ojibwe

Sap to Syrup Day 2 Literacy

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS	C.EL.1 Shows appreciation of books and understands how print works.
	C.EL.5 Uses writing to represent thoughts or ideas.
ELOF	Goal P LIT 5 Child asks and answers questions about a book that was read aloud
WSELS	STANDARD 7: Students engage in experiences to develop stewardship for the sustainability of natural and cultural systems.

Objectives: Upon completion of this lesson the student will:

- hear through the story how to harvest birch bark
- draw a picture on the back of a paper birch bark or a material that represents paper birch
- develop a relationship with trees through observation and bark rubbing

Materials and prep: FOX SONG by Joseph Bruchac, small piece of birch bark or material that represents birch bark, birch bark basket for show, markers, pipe tobacco, picture of birch tree, crayons and a small square of paper for outside time.

Lesson Procedure:

ENGAGE: Show the students the birch bark basket. Show how it is made and the material. Show a picture of a birch tree. Practice the Ojibwe word for birch and tree.

EXPLORE Show pictures of birch trees. Compare birch tree to maple trees. Do the leaves have lobes? Or (when possible) go outside to see a birch tree. Practice Ojibwemowin for Birch and Maple.

EXPLAIN Read the story FOX SONG. Discuss what things Grandma and Jamie did together. Why did they put tobacco down? What tree were they looking for? What did they harvest? While reading the story, ask questions about what they saw on their walk.

Pass each student a piece of birch bark or material that represents birch bark. Have students draw a picture on the bark of something Jamie and Grandma did together. Wiigwaasi means birch tree.

ELABORATE: During outside time, place a square of paper on tree bark. Rub the side of a crayon on the paper and the paper will show the design of bark. Teaching students the type of tree, the rubbing of the bark creates an identification by sight. This engages a tree relationship with students.

EVALUATION: Share picture stories with each student and practice Ojibwe words.

Sap to Syrup Day 2 Science

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS	C.EL.2 Learns within the context of his/her family and culture.
ELOF	COG 8: Cause and Effect: child demonstrates an increasing ability to observe, anticipate, and reason about the relationship between cause and effect.
WSELS	STANDARD 5: Students investigate and analyze how change and adaptation impact natural and cultural systems.

Objectives: Upon completion of this lesson the student will:

- listen to an oral traditional story about how the Ojibwe were given Maple Syrup
- talk about how sap and syrup are connected
- observe and connect with trees in the playground using breath and words

Materials and prep: How the Ojibwe Got Maple Syrup 2 straws per student Each a different color. A glass of water. Recipe card. Legos of 3 different colors (blue, red, yellow)

Lesson Procedure:

ENGAGE: Have you ever heard of Wiineboozhoo? He is in many stories of the Ojibwe. Bring out the jars of Sap and Syrup again from Day 1 Math. Show differences in the 2 liquids.

EXPLORE Bring out all the tools of the sugar bush, the bucket, basket, taps, and review their job and their Ojibwe name. Let students touch the tools and ask questions.

EXPLAIN Read the story *How the Ojibwe Got Maple Syrup*. Discuss: How did Winneboozhoo change the syrup to sap in the tree? Why did Winneboozhoo change the syrup into sap in the tree? Give each student 2 straws and a glass of water. The tree has vessels that carry water and sap up and down the tree. Have them suck up water from the glass. The water goes up the tree from the roots, sucking the water up the straw. Now the other straw. Have them suck up the water but then let the water fall through the straw into the cup. The sap goes up in the straw in the spring, but down the tree to be stored in the roots in the summer.

What is sap? The tree makes its own food. People must find food to eat in our gardens, or grocery stores, but trees make their own.

Show them the recipe card and Legos.

- Take a yellow Lego: this is sunshine. Let us add to the recipe.

- Now take a red Lego. This is our breath. Breathe out. The tree takes our breath and adds it to the sunshine.
- Hook together the sunshine and the breath. Now add water (a blue lego).
- Sunshine, plus breath, plus water makes food, or sap.
- You just made a piece of watery sugar just like the tree makes.

ELABORATE: Go outside to find a tree. Breathe out on the tree. The tree uses the breath to make its food. The tree also lets out oxygen for students. Have students breathe in the oxygen. Trees and people are related and need each other.

EVALUATION: Worksheet of the tree. Draw the vessels in the tree. Draw the sunshine. Draw the breath. Draw the water. These are the ingredients of the sap.

HOW THE OJIBWE GOT MAPLE SYRUP

One day Winneboozhoo was standing under a maple tree. Suddenly it began to rain maple syrup (not sap) right on top of him. Winneboozhoo got a birch bark tray and held it out to catch the syrup. He said to himself:

“This is too easy for the People to have the syrup just rain down like this.”

So, he threw the syrup away and decided that before they could have the syrup, the People would have to give a feast, offer tobacco, speak to the manido and put out some birch bark trays.

Nokomis, the grandmother of Winneboozhoo, showed him how to insert a small piece of wood into each maple tree so the sap could run down into the vessels beneath. When Winneboozhoo tested it, it was thick and sweet. He told his grandmother it would never do to give the People the syrup without making them work for it. He climbed to the top of one of the maples, scattered rain over all the trees, dissolving the sugar as it flowed into the birch bark vessels.

“Now we have to cut wood, make vessels, collect the sap and boil it for a long time. If we want the maple syrup, we have to work for it.” (story, 2014),

<https://glitcsnap.wordpress.com/2014/03/10/how-the-ojibwe-got-maple-syrup/>

RECIPE FOR MAPLE SAP

**Take a bit of sunshine.
Add your breath that you exhale.
Mix in Water.
Stir. YOU MADE SAP**

**Take the Sap and put it in the PHLOEM and
store it in the roots.**

SAP TO SYRUP

Day 3 LESSONS

Sensory focus: Hearing

Theme: Practice Sugar bush traditions

Cultural Relevance and academic connections

The Day 3 lessons give students the chance to practice the steps of the Sugar Bush. They use and see the sugar bush tools in their daily lessons and model the process of the sugar book through lessons and literacy. Sensory focus on hearing will be used when students listen to the tap tap tap of the sugar taps, and the drip drip of the melting snow or the sap dripping in a bucket and listening to the sounds of nature. Students will lay down tobacco daily with practice of Ojibwemowin.

Using the buckets of the Sugar Bush gives students the ability to see and use the tools of the Sugar Bush in their everyday routine. The number 2 and the number 5 can be easily confused by kids when writing and reading, as they look similar but are reversed. Using the Sap buckets will be a fun way to sort the two numbers while practicing the Ojibwemowin name of each number.

In day three, measuring is practiced along with the tasks of the sugarbush. Students will get a feel for how heavy the buckets are through the task of carrying sap. Half full, full, and quarter full will be used. While at the sugarbush, students will observe that some trees give more sap than others.

The steps of the Sugar Bush are emphasized during literacy practice. The Ojibwemowin phrases can be introduced the students during this time, as they could be used during the field trip to the sugarbush. The Letter I is introduced to connect the tradition of sugar camp, Iskigamizigan, to the written letter I and the sound of letter I. Connecting the alphabet letters to an Ojibwe word, could create the interest in teachers to connect all of the alphabet to Ojibwe words.

Sap to Syrup Day 3 Math

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS	B.EL.1 Demonstrates an understanding of numbers and Counting.
	A.EL2: Engages in meaningful learning through attempting, repeating, experimenting, refining and elaborating on experiences and activities
ELOF	Goal P-ATL 8: Child holds information in mind and manipulates it to perform tasks.
	Goal P Math 3: Child understands the relationship between numbers and qualities.
WSELS	STANDARD 2: Students evaluate relationships and structures of natural and cultural systems and analyze their interdependence.

Objectives: Upon completion of this lesson, the students will

- sort the numbers 2 and 5
- count to 10 in English and Ojibwe
- look for natural objects in groups of 2 or 5 outdoors

Materials and prep: Cut out of numbers 2 and 5, enough for each child to have one. 2 sap collection buckets, one with the number 5 taped on the side, and one with the number 2 taped on.

Location: Classroom

ENGAGE: Do you remember when we talked about what a maple tree leaf looks like? Using your hands show me how to make your hand look like a maple leaf. Hold it up in the air.

EXPLORE: Around the room are placed the numbers 2 and 5. Find them and then bring them back to your spots. Number 5 and 2 are similar looking numbers. Repeat Ojibwe names and then discuss similarities and differences in these two numbers.

EXPLAIN: Next, meet on the carpet in a circle, sitting on the floor, ready to learn position. In the middle of the carpet are two maple sap buckets. One has the number 2 and one has the number 5. Look close at those numbers and practice which one is which. Teacher can practice with the group for a bit. Each student has a turn to put the numbers they found around the room in the right Maple Sap bucket.

ELABORATE: Before outside time, pass out a pinch of tobacco to each student and line up for outside. Each student will follow each other and lay tobacco at the Medicine Rock, as it is customary in Ojibwe culture when asking for things or giving thanks. Have the students say Miigwech Ziinzibaakwadwaatig while they lay down the tobacco. Exploration prompts: find numbers of 2 things and 5 things in nature. Look for leaves, bugs, or twigs to count.

EVALUATION: Practice the number 5. In Ojibwe the number 5 is naanan. Practice the number 2. In Ojibwe the number 2 is niizh. Can you repeat the Ojibwe name?

Practice tracing the number 5 on the worksheet. Practice with the maple leaf counters and count 1-10 in English and Ojibwe. Practice the names of the Ojibwe sugar bush tools.

Sap to Syrup Day 3 Literacy

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS	C.EL.1 Shows appreciation of books and understands how print works. C.EL.5 Uses writing to represent thoughts or ideas.
ELOF	Goal P LIT 5 Child asks and answers questions about a book that was read aloud
WSELS	STANDARD 7: Students engage in experiences to develop stewardship for the sustainability of natural and cultural systems.

Objectives: Upon completion of this lesson the students will

- listen to the steps of the sugar bush from the story *Ininatig's Gift of Sugar*
- Listen to the sounds of nature to create connections with nature outside

Materials and prep: ININATIG'S GIFT OF SUGAR by Laura Waterman Wittstock pg, 9-22. Have a few small hammers.

Location: Classroom

Lesson Procedure:

ENGAGE: Read pg. 9-22 of ININATIG's GIFT of SUGAR aloud while students listen

EXPLORE Show students the hammers. Have them make the tapping noise with the hammer. Students practice and hear the tap tap tap of the hammer.

EXPLAIN Pass out the Worksheet of the Letter I. Practice Iskigamiizigan (Sugar Camp). Have them draw the tools of the sugar camp and practice tracing the letter I

ELABORATE: Students will go outside to listen to the sounds of nature. Close your eyes and listen. Have students point to a place where they hear a sound. Look around at classmates. Now close your eyes and point to a new sound. Share.

EVALUATION: Share picture stories with each student and practice Ojibwe words.

Sap to Syrup Day 3 Science

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS **Goal P-MATH 8: Child measures objects by their various attributes using standard and non-standard measurement.**

ELOF **B.EL.2 Understands number operations and relationships.**

WSELS **STANDARD 1: Students develop and connect with their sense of place and well-being through observation, exploration, and questioning.**

Objectives: Upon completion of this lesson the students will

- compare pails of water using the words, HALF, FULL, QUARTER
- listen to animals and predict which animals are making noises

Materials and prep: 3 buckets for the sugar bush, water

Location: Outside

Lesson Procedure:

ENGAGE: Show students the metal bucket, an Ojibwe basket, and a maple sap bag: three different ways to collect sap. Show them a tap that pounds into the tree. How does each hang on the hook? The Ojibwe basket does not hang, it sits on the ground.

EXPLORE: Students will do this lesson during outside time. Allow them 5 minutes of free exploration before bringing them together.

EXPLAIN: Students will observe three buckets of water. One is full, one is half full, and one is quarter full. Have students carry each bucket to notice the difference in weight. This will be practice for the trip to the Sugar Camp on Friday.

ELABORATE: What did the buckets sound like when they were being carried? What other sounds were in the outdoors: birds, cars, people, snow crunching? Students share with each other what they heard.

EVALUATION: Practice Ojibwe Sugar Bush words learned already this week

SAP TO SYRUP

Day 4 LESSONS

Sensory focus: Touch

Theme: Fire/Boiling

Cultural Relevance and Academic Connections

The Day 4 lessons introduce the Sugar Bush fire and boiling to the students. They use and see this step in their daily lessons. Using the student's memory of touch, they discuss fire and the memories of fire, collect firewood, as well as touching the difference of sap and syrup. Maple leaf counters are used to practice counting up and down using Ojibwe numbers. Adding and subtracting counters will allow students to practice math using Ojibwe language. This repetition reenforces Ojibwemowin. There will be the daily laying down of tobacco.

The students hear a story told exclusively in Ojibwemowin and will use the pictures as guidance to comprehension. This technique is used in pre-reading to begin to make sense of written language and to use print language to follow along with what is happening in the pictures. The St. Croix Tribal Education Cultural Coordinator or a fluent Elder speaker could assist in reading this story.

The four sacred foods are discussed. Each of the four sacred foods is nutritious and important to the healthy way of life, and maple syrup is a sacred food. It is important for students to understand that maple syrup is so important that it is sacred.

Sap to Syrup Day 4 Math

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability:

WMELS	B.EL.1 Demonstrates an understanding of numbers and Counting.
	B.EL.3 Explores, recognizes, and describes Shapes and Spatial Relationships
ELOF	Goal P Math 1: Child knows number names and Count Sequence.
	Goal P Math 3: Child understand the relationship between numbers and qualities.
WSELS	STANDARD 2: Students evaluate relationships and structures of natural and cultural systems and analyze their interdependence.

Objectives: Upon completion of this lesson, the students will

- add and subtract maple leaf counters
- count to 10 in English and Ojibwe
- sort natural objects by how they “feel”: cold, rough, and hard

Materials and prep: Worksheet with Dot to Dot Maple Leaf. Cut out of numbers 2 and 5, enough for each child to have one number, either 2 or 5. Or both numbers. 2 sap collection buckets, one with the number 5 taped on the side, and one with the number 2 taped on.

Location: Classroom

Lesson Procedure

ENGAGE: Ask students questions about Campfires. How do they feel? Do you like the smell? How is fire used in making Maple syrup? Student volunteers tell a story about a campfire or a fire with maple syrup.

EXPLORE: The maple leaf that we made on Monday is somewhere in the room. Each student finds their own and returns to the learning circle.

EXPLAIN: Practice adding the maple leaves and then subtracting the maple leaves. Put students in groups with objects as counters. Have students follow directions and practice with addition and subtraction problems using counters.

ELABORATE: Pass out a pinch of tobacco to each student and line up for outside. Each student will follow each other and lay tobacco at the Medicine Rock, as it is customary in Ojibwe culture when asking for things or giving thanks. Have the students say Miigwech Iskigamiizigan while they lay down the tobacco. During outdoor time, find 3 things. One thing that is cold. One thing that is rough, and one thing that feels hard.

EVALUATION: Practice Ojibwe words for 1-10 and from the Sugar Bush

Sap to Syrup Day 4 Literacy

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS **C.EL.1 Shows appreciation of books and understands how print works.**
A.EL. 2 Listens and responds to communications with others.

ELOF **Goal P LIT 5 Child asks and answers questions about a book that was read aloud**
WSELS **STANDARD 1: Students develop and connect with their sense of place and well-being through observation, exploration, and questioning.**

Objectives: Upon completion of this lesson the students will

- listen to a story told in fluent Ojibwe
- use pictures to make sense of the story and connect to the language
- notice natural textures to connect to the outdoors

Materials: NENDA-GIKENDAMANG NINGO-BIBOONAGAK ZIIGWAN published by ANA and GLIFWC found in St. Croix Education Library

Location: Classroom

Background Information: Students will hear a story about the Spring Sugar Camp spoken in only Ojibwewomin. While listening to the story, students will use pictures to guide their comprehension.

Preparation: Worksheet on fire building

Lesson Procedure

ENGAGE: Read NENDA -GIKENDAMANG story. Use St. Croix Education Elders and/or staff to assist with reading fluent Ojibwemowin.

EXPLORE Bring out the Sap and Syrup examples from Day 1 lessons. Have the students touch, which one is sticky? Encourage feeling words to describe.

EXPLAIN Practice Ojibwe using the worksheet of sugar bush tasks.

ELABORATE: Students will go outside to gather sticks to bring to the Sugar Bush campfire.

EVALUATION: Practice Ojibwemowin Sugar Bush words from this week

Sap to Syrup Day 4 Science

Grade Level: Pre-K

Length of Lesson: 20 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS	A.EL.1d Demonstrates behaviors to meet self-help and physical needs.
ELOF	Goal P-PMO 5: Child develops knowledge and skills that help promote nutritious food choices and eating habits
WSELS	STANDARD 1: Students develop and connect with their sense of place and well-being through observation, exploration, and questioning.

Objectives: Upon completion of this lesson, students will

- identify traditional healthy foods

Materials: medicine wheel example

Location: classroom

Preparation: examples of four sacred foods

Lesson Procedure

ENGAGE: Show students pictures of four sacred foods. Could include deer, fish, wild game, berries, maple syrup, wild rice.

EXPLORE: In a touch table, have students touch dry wild rice, skins of deer, sap jar, and berries

EXPLAIN: Each of these four sacred foods are very healthy for people to eat. Deer and fish are the healthiest of the meat, for healthy hearts and brains. Wild rice is the healthiest of the grain, high in fiber and protein. Maple syrup has magnesium, calcium, and zinc and is good for the heart. Berries are high in vitamins and wild berries are the highest fruit to protect from cancer.

ELABORATE: Have students each get a sample of cooked rice, cooked meat, berries, and syrup to taste.

EVALUATION: Ask students to name examples of healthy traditional foods.

SAP TO SYRUP

Day 5 Sugar Camp

Sensory focus: Touch, See, Hear, Smell, Taste

Theme: Sugar Camp

Cultural Relevance and Academic Connections

The final day of lessons are at the Sugar Camp. The entire day is focused on family and community, the place of the Sugar Bush, and practicing skills and language they have learned. Students have a chance to experience all the steps of the Sugar Bush and use their senses during the time in the woods. Students lay down tobacco at the tree they tap, and they hear a traditional story around the fire while watching the sap boil. Using Ojibwemowin by identifying the tree with the name, fire, tools, and the tasks of the sugar bush, will help connect Ojibwemowin with the cultural activity. At the end of the day, the students will be given a classroom book to draw pictures of their time at the sugar bush. This book can be sent home to families to read together and continue speaking Ojibwemowin.

Sap to Syrup Day 5 Sugar Camp

Grade Level: Pre-K

Length of Lesson: 60 minutes

Correlation to Wisconsin Model Early Learning Standards (WMELS)

Early Learning Outcomes Framework (ELOF)

Wisconsin Standards for Environmental Literacy and Sustainability (WSELS):

WMELS **A.EL. 1: Displays curiosity, risk-taking, and willingness to engage in new experiences.**

ELOF **Goal P-ATL 7: Child persists in tasks.**

WSELS **STANDARD 1: Students develop and connect with their sense of place and well-being through observation, exploration, and questioning.**

Objectives: Upon completion of this experiential learning day students will

- practice laying down tobacco
- help with each of the steps of the sugar bush: drill a hole, tap a tree, taste drips of sap, carry and empty sap buckets, watch the fire boil the sap, and taste syrup
- listen to a traditional story
- share what they learned with family using a class book

Location: Sugar Bush

Lesson Procedure:

ENGAGE: As they get ready for the bus, practice the Ojibwemowin words for the steps of the Sugar Bush

EXPLORE: Miigwech Ziinzibaakwadwaatig, Miigwech Iskigamiizigan. Students will be handed a pinch of tobacco and place it at the tree they will tap.

EXPLAIN: Students will work with an adult to practice all the events of the sugar bush: drill a hole, tap a tree, taste the drips of sap, carry a bucket to empty to the larger sap bucket and place the empty bucket back on the tree. Students will watch the fire boil the sap and see the color change to brown.

ELABORATE: Listen to a story of the maple tree from an elder or tribal educator while watching the fire boil the sap. The story is about how the tree helped the Ojibwe people by giving them sap.

https://files.dnr.state.mn.us/mcvmagazine/young_naturalists/young-naturalists-article/ojibwe/ojibwe.pdf

After listening to the story, students will taste some finished syrup.

EVALUATION: Practice Ojibwemowin and draw on their classroom book.

Chapter 5

Discussion

The “Sap to Syrup” curriculum is grounded in place-based education and critical pedagogy of place, wrapped in cultural tradition, and fits the academic standards of the St. Croix Head Start. This curriculum was created to meet the early childhood standards of academics that are in practice with the St. Croix Head Start and meet the cultural emphasis outlined by the St. Croix leaders and stakeholders. The five-day thematic unit of Sap to Syrup can be used in the season of early spring when the sap begins to run. The curriculum includes Ojibwemowin language, traditional stories, and daily practice of asema (tobacco).

Limitations

Reservations, including St. Croix, continue to face barriers that keep tradition and culture from connecting completely for Native people. Historic trauma and the boarding school era were just some of the barriers discussed in the literature review. This chapter will outline the barriers that this curriculum continues to face, before getting in the hands of the Head Start to put into practical application.

In the spring of 2020, COVID-19 swept across the country, and students in the St. Croix Head Start were sent home to be kept safe in the homes of their families. This created a barrier to reaching students so they could experience hands on learning within the classroom. In the fall of 2020, the St. Croix Head Start continued to be shut down to students. The staff sent home packets of lessons to students on the bus, along with their daily lunch. In the spring of 2021, the students of the St. Croix Head Start continued virtual learning with take home activities, so the Sap to Syrup curriculum could not be pilot tested.

There are other barriers that continue in tribal agencies, including the Head Start. The current director is nonnative and does not allow Ojibwe elders, guests, or outside curricula into the Head Start classroom for cultural integration. This barrier is being felt by the parent committee of the Head Start which creates Head Start bylaws. The Head Start director is under the review of the St. Croix Education Director who continues to pursue more cultural teaching at the Head Start with consultation with the Head Start director.

I am nonnative, which acts as its own limitation. I designed this curriculum because I have worked with the St. Croix community for many years and have been a part of many roundtable discussions and program development meetings with tribal leaders, and I hear about the importance of language and starting that language development as small children. As a college advisor, many of my students have children at the Head Start, and I have worked with the Head Start through student internships, college prep programs, and Elder language tables. This has given me an opportunity to bring my background in education to provide curriculum development to cover these needs that the community needed addressed. This design did not come from my academic knowledge of lesson plans and school. This design came from relationships built over many years.

Initial Progress in Implementation

Although COVID-19 protocols meant that the first four days of the planned curriculum were not implemented, some limited pilot testing of the project was able to happen in spring of 2021. Partnering with the St. Croix Education cultural coordinator and the St. Croix TRAILS (Traditional Respect American Indian Lifestyles) director, the author of this project practiced an adapted Day 5 lesson of the Sugar Bush as a “Family Day” with the community. A sugar camp invitation for families was extended by marketing the day through emails to all employees of the

tribal government and Facebook to tribal social network groups. The cultural coordinator, TRAILS director, and the project developer tapped trees and hung-up buckets and bags. When enough sap was collected, we held the mini sugar camp.

The kids came with their families. After introductions, an oral story of the maple tree was shared. We walked into the woods after describing the bark of the maple tree. The kids all stood next to a tree, guessing if it was a maple, and then the leader asked them how they knew it was a maple. They answered by describing the smooth gray bark. Next, the leader passed out tobacco and had them thank the tree in Ojibwe, laying tobacco at the base of the tree. He showed them how to drill the hole and the kids took turns cranking the drill handle. Next the tap was pounded in with the mallet and they tasted the sap as it dripped out of the tree. The kids found a bucket and hung it up. Now it was time to check the trees already tapped. Each child went with an adult and found a full bucket to haul back to the larger sap container at the fire, and then put the empty bucket back on the tree. Around the fire, the sap was boiling, and the students watched the color change to a darker brown. They had a chance to taste the difference between sap from the tree and finished maple syrup. Children were given a classroom book developed from this project (included below) to color and bring home to their family to read and practice Ojibwemowin as a family.

The literature review of this research project showed that introducing culture, tradition, and language into an indigenous student, spills into the family and community, all receiving benefits of Bimaadiziwin (a healthy way of life). This classroom book, to be read by the student and with the family, again and again, after the completion of this Sap to Syrup Unit, will also spill into the family and community with the benefits of Bimaadiziwin.

Sugar Camp Visit Classroom/Family Book Example

ZIIGWAN (spring)

Ishkigamiziganing

At the Sugar Bush

A St. Croix Head Start Classroom book



Ozhiga'igewag

They are tapping trees.

Ozhiga'ige

S/he is tapping a tree.



What do you hear?

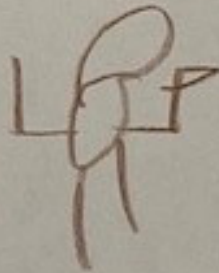
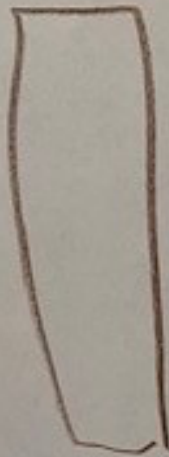
Tapping

Bagone'ige

S/he is drilling.

Biiminige

S/he makes a hole with a brace and bit.

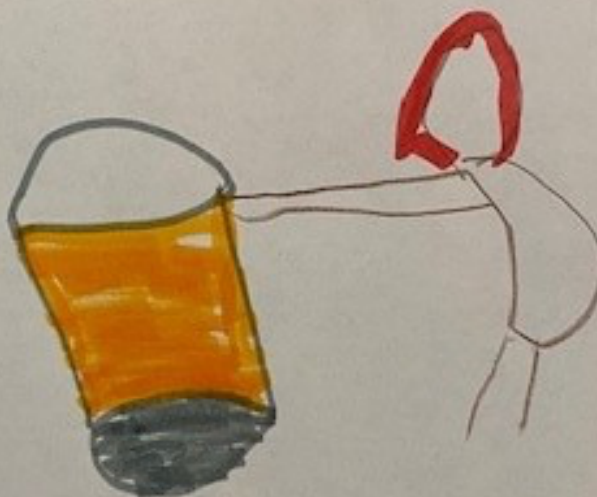


What does the tree feel like?

Bumpy

Naadoobii

S/he is hauling something.



What does the Sap taste like?

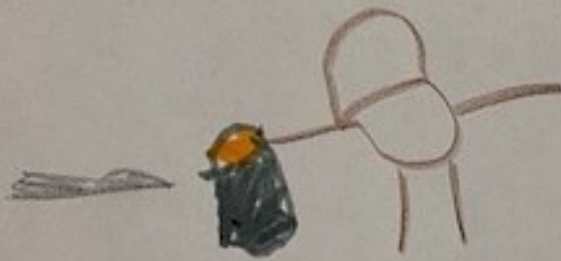
Sweet water

Agoojigewag

They are hanging something.

Agoojige

S/he is hanging something.

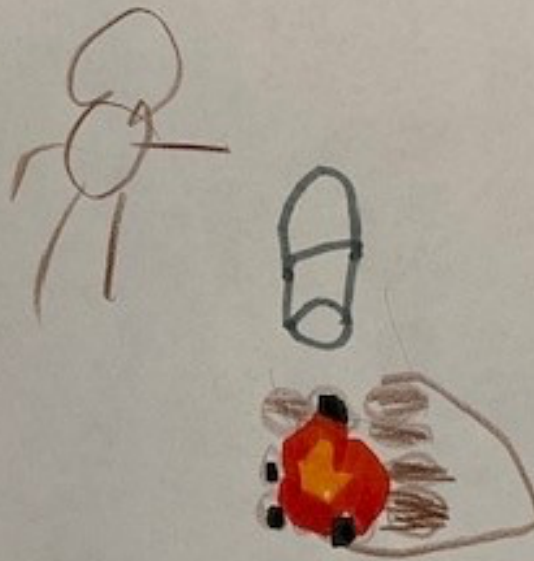


Are the buckets heavy?

No, they are empty.

Iskigamizige

S/he is boiling sap.

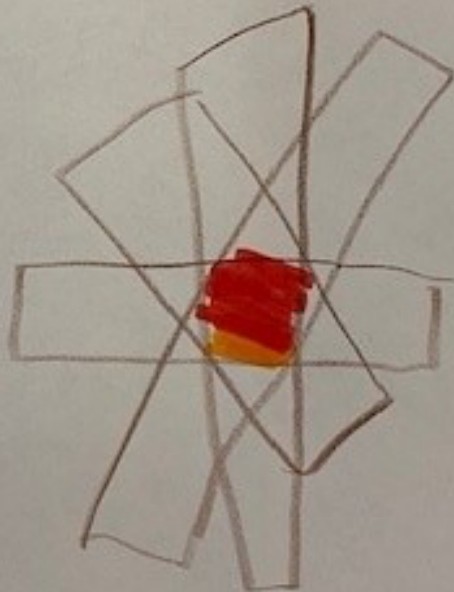
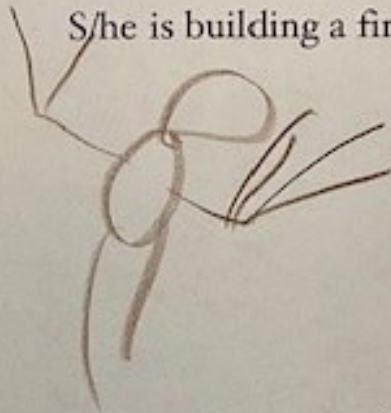


What color is the sap turning?

White

Boodawe

S/he is building a fire.



What does the fire feel like?

Warm



Future Plans

This curriculum will be handed to both the St. Croix education director and the St. Croix Head Start director to review and implement next spring. As the literature review scholars showed, this thematic unit might be the gateway into more thematic units around seasonal traditional activities such as harvesting wild rice in the fall and spearing walleye in the spring. The partnership between St. Croix education cultural coordinator, TRAILS director, and myself, plan to create another hands-on family spearing event this spring that I hope Head Start can use as a guide to create more cultural relevant lessons.

There are Four Sacred foods of the Ojibwe, and Maple Syrup is one of them. This project may be reproduced to be focused on the harvest of fish (spearing or netting), harvesting of wild rice, gathering of berries, the harvest of deer. All Ojibwemowin could be learned surrounding these practices. The curriculum has three lessons each day and could be used by the St. Croix Education to bring into the public schools to modify according to grade level.

The curriculum could also be modified to fill other lessons of social studies or writing lab, as students mature and develop. Having separate lesson design makes this curriculum able to be pulled apart or added on and modified to classroom and grade level. The lesson also allows the St. Croix community to enter the school and feel comfortable teaching culture at the Head Start or Public-school districts as a guest and prepared.

This curriculum brings the meaning and emotion of place-based education into the teaching of tradition, centered on Ojibwemowin language and daily habits, to connect relationship of people, place, and culture in a weaving of academic design.

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