The Environment & the Five Senses: Engaging Young Minds with A Holistic Approach to Learning

The Significance and the Foods of Hopi Corn

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Author Note:
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Acknowledgement:
I want to acknowledge my mother, Betty Sumatzkuku, for instilling a confident person and her knowledge in me. To my sister Noreen and my clan relatives for all your help. I want to thank all the professors for including me in this seminar. I have learned a lot and forced myself to be out of my comfort level. I would also like to thank my husband and family for their support. To my grandbabies for inspiring me to be the best teacher, I can be. Lastly, to the creator for setting this program in my path to make me proud of who and what I have accomplished this far in life.
Corn is sacred and very important to the Hopi people. Corn is a way of life, and if we did not have corn, there would be no life. In this curriculum for children ages three to five, they will be taught the importance of different types of corn and their uses. Also, how to prepare foods with corn. We pray for the well-being and watch over all living things with corn.

Context

When I was born, I was surprised my mother had me in her late 30s. I am the youngest of 10 children. I have never met my grandparents on the paternal side of my maternal grandmother. The only one I have gotten to know was my late maternal grandfather Loki Tewa. My maternal grandmother passed when my mother was incredibly young. Her name was Ella. This is where I got Ella from for my name. My grandfather later remarried Hellen. They lived in Flagstaff, Az. My mother had to depend on relatives to help her along the way. So, I was somewhat self-taught or watching and asking questions.

I did not like to ask questions because I would get a voice tone of “you should know”—most of the time, I watched. My mother would not let me practice piki making because she wanted it to be perfect and have enough to fill a box. My sister-in-law allowed me to use the last of her piki dough to practice with. And like I said in my previous paper, I practiced and imitated with mud and newspaper. It did not take me to make piki, which is a necessity if you have girls. Because as they grow from birth, adolescence, to womanhood, there are certain times in their life that piki is used for paybacks, such as during social dances, giving birth, weddings, and other ceremonies. If you do not know how to make piki, you will have to pay someone to make it, and it is getting costly. So, with this is particularly important to marry a man like mine. He is a great provider for our family but not only mine but for extended family. When my father passed, my brothers decided that our planting area would go to me because they wanted him to provide for my girls and me. My brothers have other plots they plant on. I am the only girl in our family that has had a Hopi wedding, and two of my brothers had one too.

I teach Head Start in the heart of Moenkopi village. We accept children three to five years old that allow 20 children per classroom. There are two large classrooms with two teaching staff per class. The morning classes run from 8 am-noon, then the afternoon classes run from noon-4 pm. We have four classes with 20 children per class. We do have busses, so each classroom has a different area of Tuba City and the village they service. US Highway 89 separates Tuba city and Moenkopi village. Tuba city is part of the Navajo Nation, and Moenkopi is on the Hopi reservation. The village has several members. We are part of the education department of the Hopi Tribe. We may soon be part of another education system. We are 50 miles from the Hopi tribal headquarters. We have a total of four buildings that hold classrooms for each village. One of the classes combines two villages; we have upper and lower Munqapi and surrounding areas such as Tuba City, Coalmine, Rare Metals, Monavi, in Moenkopi village, Hotevilla/Bacavi in Hotevilla, Kykostmovi/Oraibi, and Shungopavi in Kykostmovi village, Sipaulovi/Mishongnovi and Polacca and surrounding areas in Polacca.

Hopi Head Start has a separate curriculum (2002) for lesson planning. We also have two other curricula we use “Road to Readiness” and the “Creative Curriculum” (2010, 2016 by Teaching Strategies LLC). Hopi Head Start curriculum is outdated, and I would have liked to have a
The Environment & The Five Senses

curriculum that pertains to each village’s teaching because Third Mesa does not practice the same as First Mesa. It is also different from Second Mesa. There is also a language age difference.

We teach all subjects such as math, literacy, science, social studies, indolence skills, creative arts, and physical development. Kindergarten-bound children are taught kindergarten readiness skills. I often get messages from former students asking to return to Head Start, and maybe that Head Start is a slower-paced atmosphere and more nurturing to them.

The Creative Curriculum has books that we have to fill out three times in the school year to make sure they are hitting their goals and milestones. We must document these goals and milestones by anecdotal notes. We also do a Dial 4 test; this test will help us determine if the child will need any other help, such as speech or physical. We will also observe to see if any children will need behavioral help. We get our unique needs to help from the PEEP program from the Tuba City public school district. We also conduct an observation checklist. Because we are to teach concepts in Hopi and English, it has a line for Hopi and English. It will ask the child to name colors, shapes, numbers, and counting in Hopi and English, and we teach the alphabet in English only.

Before the start of the school year, we conduct home visits at the beginning of the year. Home visits give us a chance to meet our students and their families. We will ask questions they may not have answered in the initial application. We ask if they would like us to teach their children or any questions about our curricula. We also let the parents know of all the testing we do. Most parents request we teach more of the Hopi language. I will talk Hopi to the students not very many will understand what I am saying but the ones that do listen. As I said, it has a different meaning or tone to using English. We provide dental assistance and flu shots. We are like a “one-stop-shop” school, and we do it all. We are everything to these children: parent, grandparent, nurse, teacher, cook and bus monitors, and their biggest cheerleader. At the end of the year, I have the students pick a college they would like to attend in the future. At the promotion ceremony, I announce to the parents/guardians that they have a goal to participate in a college to start saving for a college fund. And keep encouraging them to keep up in school.

We often have children from the Navajo tribe in our classes. From what we gathered, the Navajo Head Start does not have enough classrooms to service all their children, so they fill our classrooms. Some parents prefer they come to Hopi Head Start, and they feel comfortable with the staff. At times, the Navajo grandparents ask why we do not teach Navajo to the children. We must remind them this is Hopi Head Start. The Head Start had employed Navajo teachers, but they also have Hopi students in their classroom. Because of our bus routes, the children are placed in specific classrooms where they reside. They did teach the children a few songs in Navajo and counting to ten. I do not feel comfortable teaching the Navajo students our religious teachings or language.

We use our kachinas to teach our children discipline, and at certain times the mean kachinas come from the mountain to discipline our children. They usually come in February. I tell the children it’s time to behave and listen to older adults, or they will come for you. So, some of my Navajo children went home and told them what I said, and I got in trouble for it. I told the family the purpose, but they did not understand. We are not to exclude students from group teachings. I
know some of our kachinas are scary to the children, but that was the purpose for disciplinary reasons. We are to have a cultural bulletin corner, and we often put pictures up so the children can see what is to come in the other months. I do not know many Navajo words or the culture, so I do not feel comfortable teaching the children what I do not know of.

Rationale

In Pasture Canyon, the corn starts to peek out of the ground soon. They will be towering corn stalks. My husband plants blue corn, white corn, sweet corn, koninqaa’o, tomatoes, green chili, watermelon, casaba melon, strawberries, pumpkins, and an assortment of beans. At the end of the season, we will have all sorts of vibrant colors of corn. When it comes time to peel and dry the corn, it is always a surprise what color the corn will be. This is extremely exciting to see as my husband labors over the planting and the weeding of our children. It is keeping them happy. This is what our ancestors have taught generations and generations of Hopis. At the beginning of the planting season, it is a family affair and the feeding of the helpers that helped. As the days go by, my husband will spend hours clearing the weeds and sometimes singing to the plants so that they grow strong and tall. It is said the plants become your children, help them grow, and they will bless you with plentiful amounts of corn to last the winter. Do not neglect your plants! As children, we would help plant with my father and brothers. As I grew older, I would help my mother cook for the planting party. This is what my husband calls it. Sometimes I would not help plant; instead, I would play in the water streams in the pasture canyon. There are markings on the canyon wall that indicate our plot, and bullet holes indicate where the plot starts and stops. With our last name carved into the canyon rock wall, “SUMATZKUKU” and mine and my siblings, names under our last name. This always fascinates me, and I wish I could go back in time to spend and listen to my parents and what they were trying to teach me.

My parents grew up in the boarding school era. My mom never made it past grade school. She ran away from the boarding school. My dad did not finish high school. He used to tell us stories of parents hiding their children so they would not be taken to the boarding school. So, when I went to school, it was a big deal to get an education. When I started school, my parents began to talk to me in English, and this was done so that I would not have poor English skills. When I was incredibly young, I was a fluent Hopi speaker. I understand it more than I speak it. I do speak it when I must. I get looks of surprise when I do speak Hopi.

I have created this curriculum to educate our young three better–5-year-old children to help be productive to the elderly. Also, to help them with the Hopi language. They will gain the skills to be a productive member of the village. It takes a village to raise a child, which is the same for plants. It is also called sumiuunagwa (helping one another). Not all families plant, so this would give the children a chance to learn a new skill. The uncles are the ones who play a big role in a child’s life, but not all children have that person. The whole breakdown of the village is because of alcohol and drugs. I hope to be a person to influence their lives positively. Later in their lives, they may cook for their grandparents and remind them of the foods they used to eat. I have had this experience; my bother would always ask me to cook a particular dish. I learned it from the elderly center we frequent in grade school. There they would teach us how to make some Hopi foods, and we would even go out into the public to pick wild greens and cook them.
Content Objectives

Blue corn is the most used corn by Hopi. Corn has helped us survive our way of life for hundreds of years to this day. Corn had kept us fed even when meat was hard to come by. Just like children, the more you have, the richer you are. At times corn is hard to grow when we cannot get any rain. So, we had to get haul water to them in some planting seasons. Also, the corn must be watched because at the start of the planting season, the rodents will dig out the seeds, and in the middle of the season, the crows will eat the corn. We have had entire fields of corn wiped out by rodents and crows. One year we were wiped out by cows. Right now, my sister is battling cows at their planting field. The law on the reservation is if they eat your corn, you have the right to shoot them.

We have also had horses come and eat the dry corn at the drying season. We also use other colors of corn, but piki bread is made from blue cornmeal. It is always a must that you have a supply. At weddings, blue corn flour is used the most for piki making, somiviki, and tsukuviki. All the blue corn that is prepared is also distributed to the groom’s relatives who have brought sheep, wood or has helped with the bride’s wedding outfit. Also, the aunts who have helped with butchering the sheep or with the hominy will get a bag of flour. White corn flour is also used for piki making and pikami.

Blue corn is used for many piki making and is just about used in every ceremony: social/katsina dances, weddings, coming of age ceremonies, baby naming ceremonies, and funerals.

When a child is born, it is a blessing, the child adds on to the family clan, and as they grow, they will help with chores and clan responsibilities. The child is celebrated at the end of 20 days. For the first 20 days of the child’s life, they are isolated in a dark room for 19 days to keep them safe from sickness and harm. At the end of 20 days, the child’s paternal female relatives will wash the baby’s hair and be given names related to the father’s clan. This is done before the sun comes up. When the sun rises over the horizon the child is shown to the sun and all the names of the baby is given to the sun. The sun is told to watch over the child for the rest of its life. Then a feast will follow. The feast will consist of hominy and mutton stew, pikumii (white corn pudding), yeast bread, and green chili.

Days before the 20 days, the maternal family will be busy making piki for the paternal family as a payback for washing the baby’s hair. They will also prepare corn for the pikumii. Days before the celebration, the paternal family members will prepare the white corn for the hominy stew, the day before the feast, they will butcher a sheep for the stew. They are responsible for the stew.

The mowii is responsible for the making of the pikamii, the mowii is the female in-law to the paternal clan, she will also prepare white cornmeal. If there is no mowii

This is a lot of work as I have had two granddaughters born two months apart. I was making piki bread every chance I had. As a Hopi woman, work is never done, from sun up to sundown there is always something to prepare for or to do.
When a Hopi wedding is planned tons of corn is needed and all the clan relatives come to help with this wedding, it would take place in the fall/winter months, but not in December. It takes months to prepare for a wedding. Garbage cans of blue cornmeal are needed for a wedding. To a lot of shelling of corn, course grinned, roasted then fine grinding the blue corn. Also needed is white corn to be made into qwiptosii, this is a long process; this is Hopi coffee creamer and white cornmeal for the pikami. Tupevu is also needed. This is usually cooked in a pit at the end of the corn season; this is done with sweet corn. It is made into powder for a wedding and is a sweet treat. The maternal family will also make piki to feed the men who help with any of the chores that are done during the wedding. The bride will be tested on her; piki, somiviki, tsukuviki, pikamii making, and her griding corn skills. The groom's aunts will butcher and clean sheep intestines, and they oversee the novkwivi making. All the paternal aunties will make fun of the bride if she does not know these skills. She should also go out into the public events to help others so that if she is to get married or have a baby, they will, in return, help at their events.

Children are visual learners when they start learning. My granddaughter tried to make piki when she was three, and the stone was not up to temperature when she tried. She decided she wanted to try piki making, so she got on the chair, got some dough in her hand, and wanted to put it on the stone. She was unsuccessful at her attempt; I will have her try again as she gets older. She is very observant; she will pick up on all things shown and taught to her and then understand. She will become a well-rounded Hopi woman. She is half Navajo; her great grandmother Roselyn John also teaches her some Navajo, so she is trilingual.

Alignment with Standards

I will use all the standards in all the lessons I will be teaching:

**Social and Emotional Development:**
The children will express themselves with feelings or knowledge from home. They will identify their feelings. They will be able to communicate with each other as well as adults. They will be able to adjust to activities outside the classroom, and they will express what manners to use in different environments.

**Approaches to Learning standards:**
They will ask questions to gain information for themselves. They will go out into new environments and experiment with new tools they may not have used before. They will choose what activities they would like to try to gain independence. We will make decisions together by the teacher asking questions, and we can solve what may happen. We will solve problems together.

**Language and Literacy Development:**

We will be learning to talk in front of the class by introducing ourselves. I will ask who, why, what, where, and when we use the corn. I will be writing down all their responses to the questions to see their responses written. I want to make a book about their experiences. (I have done a classroom book based on Spilled Milk). We will read books that pertain to the lesson.
Math Development:

We will be graphing our questions such as: “what is your favorite color corn”, “who’s parents’ plant and uses the corn they grow” etc…. Count out how many kernels go in the hole when planting. Measure the ingredients and look at the numbers on the measuring cups or spoons. We will be comparing using tools used to grind the corn.

Science Development:

We will be looking at the germination of the corn plant. Learn the names of the parts of a corn plant. Where corn can grow, how much water is needed. Ask more questions, “Why do the Kachinas sing about rain?” “Why do we need the rain?”

Social Studies Development:

This is where we will bring the Hopi Language on introducing themselves and making them aware of who they are, all valued individuals. They will know their clans and who is related as a clan brother or sister. They will see the importance of corn and what’s the purpose of corn. They will know where they live in Arizona on the Hopi reservation. They will know the roles of Hopi women and men. But they will learn that men can cook also, and girls also plant.

Physical, Health, and Safety Development:

When planting, we gain physical and mental development. We use our muscles to dig the holes. Because we will be using boiling water: to review safety around the stove and using utensils to stir the foods, I will be using fire for the piki making, and we will review fire safety. We were also going on trips holding hands and looking both ways before crossing the street.

Fine Arts Development:

I plan to set us a piki stone in the dramatic play area for two weeks. We play our traditional music from Kachina music and social dance music; we also have some traditional dress-up clothing, and we provide cultural instruments and masanpiis.

Teaching Strategies

As a teacher, I plan to implement my lesson by teaching the child their Hopi names and using their Hopi name in the classroom. If I can, I will try to explain what their name means. They will learn to introduce themselves in Hopi; at morning circle time, I will have them repeat after me to learn the language. I will first ask if anyone knows the object, “corn” and the colors in English, then tell them and repeat in Hopi. Some children born for the corn clan will hear their name in some of the words used. Since this is the month for harvesting, we will go over the concepts for the month, which includes the wedding season. We will take a trip down to a cornfield and see if anyone is harvesting and helping. I will also bring corn to peel and place on a drying rack. This is only if we have corn to harvest. I will then show them the process of producing the blue cornmeal. From start to finish, we will be comparing the uses of the tools we use to grind the
corn. I plan to show pictures of the process of planting. We may try to start a corn plant. We will also make a few foods with the blue flour we have produced. This will include the safety part of the project. We will be learning how to read a recipe and looking for measuring cups and spoons for the projects.

**Classroom Activities**

The lesson would run through October, but I would like to take two weeks out of the month in the Hopi curriculum because of Halloween. It is the time of “Natwani” Harvesting time, and all the corn should be drying out on old bed frames or homemade racks made from screen material at this time of the season.

We have a daily schedule we follow daily:
- Welcome/attendance
- Bathroom/wash hands
- Breakfast
- Toothbrushing
- Independent reading/puzzles
- Circle time: review concepts/singing, dancing/introduction of small group activities
- Free play after completing their projects and some form of writing.
- Outdoor play
- Lunch

Group reading, get ready to go home

Week one our group activities:

Introduction of corn:

Question to the students, “What is blue corn used for?” “How do we get blue corn?” This will improve their social and emotional skill, creative expression, approaches to learning, language development, logic and reasoning, science knowledge, social studies knowledge, and skills. We can make take a vote of popular answers. This shows a form of math skills and counting of hands.

I will show them pictures of crops from when they were planted to when the corn was picked. By this time, the corn should be out on the racks drying, and they can ask the question if they wish.

For activity time, we will color a picture of a cornfield.

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<tr>
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<th>Materials</th>
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<tbody>
<tr>
<td>L.D. 2b Uses rare words</td>
<td>Introduce different colors of corn; Blue corn/sakwa, white corn/Qootsa, red corn/Paalangpu, yellow</td>
<td>Bring different colors of corn from home.</td>
<td>Language</td>
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describe ideas, feelings, activities, and experiences | corn/sikyangpu, orange corn/Tsilingpu, pink/Palatska, maroon/purple/Kavati, and Indian corn (multi-colored kernels.)
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After adding them to the science area for further observation, I will let them pass them around and look at them.

We will then make a graph of what the class will decide on the class’s favorite color.

If we have corn that has not been peeled at this time, we will take a trip to my place and peel corn. Also, letting know we save the corn husk for the food, we will make later in the week. They, too, can experience the surprises they will unveil. My place is within walking distance from the school.

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<td>S.E. 8a Initiates and sustains positive interactions with adults and friends. A.L. 6b Pursues challenges L.R. 2 Matches and sorts objects by 2 or more attributes SKS1a Demonstrates curiosity about objects, living things, and other natural events in the environment SSKS 1c The child describes some characteristics (e.g., clothing, food, jobs) of the people in his/her community PDH4c Uses eye-hand coordination to perform simple tasks</td>
<td>Shelling corn into a tusiiya and wash the corn</td>
<td>Tusiiya, bucket, wash pans, tables and momokpis</td>
<td>Social and emotional development Language</td>
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I will bring ears of dried blue corn, and I will ask them what we will need or get the blue cornmeal? I am sure many children will know what somiviki is and see how it is made. We will then shell the blue corn and clean it. And I will fill the water table to wash it and pick out the bad kernels. We will then set out a table to put a cloth on it to dry the corn. Here is hoping for nice sunny weather.

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<tr>
<td>S.E. 8a Initiates and sustains positive interactions with adults and friends.</td>
<td>Grinding corn using two different methods.</td>
<td>Hand grinder vs. stone grinder</td>
<td>Language, Physical strength</td>
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<tr>
<td>A.L. 6b Pursues challenges</td>
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<tr>
<td>SKS1a Demonstrates curiosity about objects, living things, and other natural events in the environment</td>
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<tr>
<td>SSKS 1c The child describes some characteristics (e.g., clothing, food, jobs) of the people in his/her community</td>
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<tr>
<td>PDH4c Uses eye-hand coordination to perform simple tasks</td>
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I will bring in a hand grinder and, if it is possible, find and borrow a maata and a mana. We will use our arm muscles this day to compare which tool is easier to use. We will course grind the corn, and we will discuss the textures of the corn.

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<tr>
<td>S.E. 8a Initiates and sustains positive interactions with adults and friends.</td>
<td>Using the blue corn flour to make somiviki.</td>
<td>Large mixing bowl</td>
<td>Language, Physical development, Science, Social studies</td>
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<tr>
<td>A.L. 6b Pursues challenges</td>
<td></td>
<td>Measuring spoons and cups</td>
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<tr>
<td>SKS1a Demonstrates curiosity about objects, living things,</td>
<td></td>
<td>Stirring stick</td>
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<td></td>
<td></td>
<td>Cornhusk</td>
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<td></td>
<td></td>
<td>Blue cornflour</td>
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<td></td>
<td></td>
<td>Sugar</td>
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<td></td>
<td></td>
<td>Ashes</td>
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<td></td>
<td>Strainer small and large</td>
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The child describes some characteristics (e.g., clothing, food, jobs) of the people in his/her community

**PDH4c**
Uses eye-hand coordination to perform simple tasks

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### Activity

**Using the blue cornflour to make puvelpiki**

### Materials

- Large mixing bowl
- Measuring spoons and cups
- Stirring stick
- Blue cornflour
- Ashes
- Strainer small
- Cooking pot
- Water
- Cookbook: Healthy Hopi Recipes and Native Edible Plants

### Domains

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<th>Language</th>
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<th>Science</th>
<th>Social studies</th>
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We will get the cook’s approval before we do any of the projects, and it is in their job description to be doing cooking activities with the children and providing cultural dishes.


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I will ask the children if anyone in their family makes piki? Piki making day, field trip day. We will be taking a trip to my place. I would have already made my batter for the piki making and have a few made for tasting. I will demonstrate how it is placed on the stone and peeled off at my place. I will also let them know what else I use as a cleaning agent so it will not stick to the stone.

I will set up a piki-making area in the dramatic play area made from boxes or a wooden shelf: Paper wood, newspaper to roll. I am interested to see if they would play with it.

**Student Assessment Plan**

This will conclude my two-week lesson. We will, however, review in the weeks to come. And hope they go home and explain to their parents the activities they experienced. By the time these projects are done, they will be able to express themselves to become successful individuals.

I will be assessing their progress by using the Strategies Gold assessment booklets and our Hopi Head Start observation checklist.

At our Parent/ Teacher conferences, I will ask their parents about the handouts sent home, if they prepared any of the foods we made in school. A portion on the Parent/Teacher Conference form asks if their child has improved or if they noticed any changes in the child.

All the paperwork is compiled and assesses the progress of each child.

In the end, I would like the children to express their experiences and feelings. I would record what they say, compile their stories, and make a book of short stories so that they know they are authors. If possible, I would like to make them a book to keep forever.
The Environment & The Five Senses

Key words:
Colors in Hopi and English
A few Hopi words
Recipe
Grinding
Mix/ blend
Corn husk
Batter/ dough
vote
sphere
roll
measuring cups
stir
boiling
Author

Resources

People to interview:
Lloyd Masayumptewa: A Hopi form the village of Oaibi. My husband, he is an Archeologist, farmer, and rancher. He is genuinely knowledgeable about planting, and he has been planting since he was young.
Noreen Sumatzkuku-Kewenvoyouma: A Hopi woman form the village of Moenkopi. She is my older sister and is a teacher at Hopi Day School. She and I have been preparing for traditional events for Hopi cultural practices together.

Books:
Healthy Hopi Recipes and Native Edible Plants:
Author: Various
Publisher: University of Arizona Press, 2008
The book has recipes of Hopi dishes and Edible plants and has charts of the foods' nutritional values.


Hopk Cookery:
Author: Juanita Tiger Kavena
Publisher: University of Arizona Press, 1980
The book has easy to follow recipes and the history and culture of the Hopi people

The Mahnah Club Cookbook and Recipes Hopi Native American Indian World
Author: Various
Publisher: Mahnah Club, 1979
This book has recipes. (I cannot find a copy I may have to remove this resource)

Celebrate My Hopi Corn
Author: Anita Poleahla
Publisher: Salina Bookshelf Inc., 2016
This book is tailored to younger children. The book is about how corn is planted, cultivated, harvested, and prepared in Hopi homes.
http://www.native-language.org/numbers/hopi_numbers.htm

The Life and Times of Corn  
Author: Charles Micucci  
Publisher: Houghton Mifflin Book for children, 2009  
This book covers the science of corn and the history of corn.


Corn Is Maize The gift of the Indians.  
Author: Aliki  
Publisher: Harper Collins, 1986  
Corn is used for eating, making other foods, and feeding animals. Corn can last if the corn is stored right.


Creative Curriculum  
Author: Kai-le’e Berke, Carol Aghayan, Cate Heroman  
This is the curriculum we use for lesson planning.

Road to Readiness  
Author: unknown  
Publisher: Unknown  
This information is used to make sure the children hit their readiness goals and milestones.


Hopi Head Start Curriculum  
Author: Unknown  
Publisher: unknown, 2002  
This book is used for lesson planning and has concepts for each month in English and Hopi

YouTube videos:  
Making Piki Bread: by Victoria Spencer and Marlene Sekaquptewa, 1996  
Making Piki Bread - YouTube  
Ruby Chimerica Makes Piki Bread - YouTube  
Piki Bread.mov: Arizona Highways TV, 2012  
Piki Bread.mov - YouTube