



Popcorn Project

Owl - Saint John Paul II: Preschool 1

Background

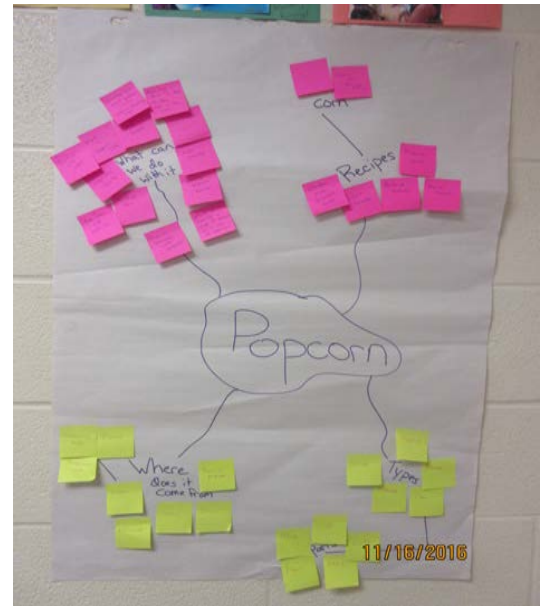
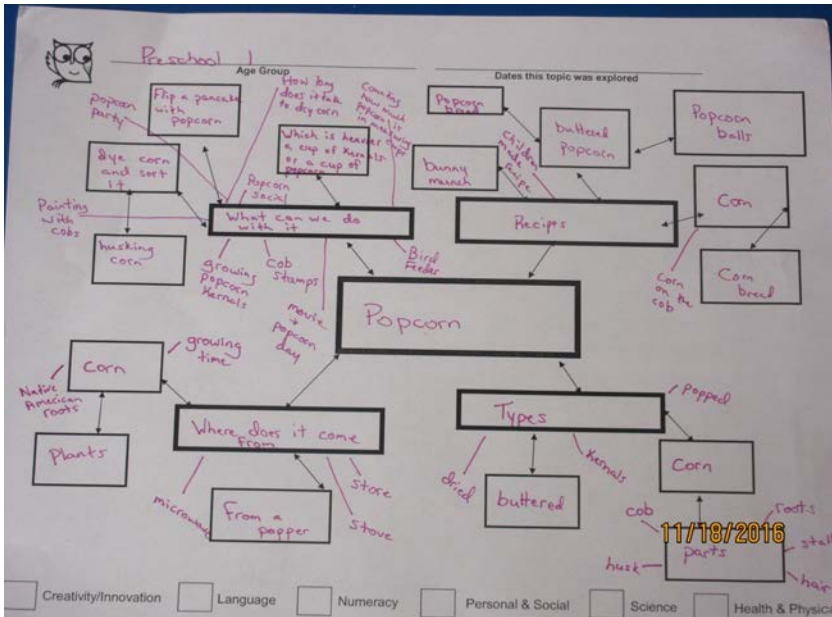
The preschool 1 room project started September 13, 2016, and ended December 2016. Lisa did a science activity on popcorn to see what happens when the kernels get hot. Our project involved the Preschool 1 children who are 2.5 years- 4 years of age. The children in the preschool 1 room have all been excitedly participating in this project so far. The staff involved in this project are Lisa, Jacquie, Lesley and Amy.

Phase 1: Beginning the Project

We started Phase 1 of our project at the beginning of September 2016. We had a number of new children move up from the toddler room and we were getting to know each other and build new relationships. Lisa thought it would be fun to do a popcorn science activity. She brought in her stir crazy popcorn maker, along with some microwave popcorn. We watched to see what would happen when the popcorn kernels began to get hot. We observed the kernels expanding and popping. Dee Dee noticed that the popcorn went around and around. As the popcorn started popping Silvia said excitedly, "It's bouncing", while other children said "Pop, pop, pop". The next day Lisa added 3 bags of popcorn kernels to the sensory bin with measuring cups and spoons as well as mugs and dishes. In addition, that day it just so happened that Kim added corn on the cob to the menu for lunch. We made a chart of "Which corn did I like best?" Ava, Owen and Mia R. had a lot of fun scooping and measuring the corn kernels. There was so much giggling coming from the sensory bin as Ava said, "This is so much fun". After making the popcorn and eating it, the children asked if we could make popcorn every day. We made a list of what we know about popcorn, what we want to know about popcorn and whom we can ask. We then brainstormed to make a web.

| What we know | What we want to know | Who we can ask |
|---|---|-----------------------------------|
| It is yummy- Brooke | What is this on the corncob? - Silvia | The children – Silvia |
| We can eat it- Jackson and Jennifer | How do you make it? - Maya | Kim the cook – Silvia and Olivia |
| We can make it in the microwave- Rockston | Why do you pop it? - Silvia | Our mommies and daddies- everyone |
| We can stir it- Dee Dee | Where does popcorn come from? - everyone | A Farmer- Nahum |
| I like to pop it- Olivia | What flavours/tastes/kinds of popcorn is there? | A popcorn place- everyone |
| It goes pop, pop, pop- Mia D | | |

As a team, we discussed different sub topics and activities we could provide to expand on the children's learning in regards to popcorn. We then gathered the children to see what direction their interests might take the group in. Both webs were posted on our history board in the classroom. We decided that we wanted to move forward with the investigation and research of different types of popcorn, where popcorn comes from and different things we can do with it.



Phase 2: Developing the Project

On September 8, 2016 we made popcorn with Lisa in her stir crazy machine. This is the science activity that peaked the children's interest so we continued our investigation with a number of different activities.



Evenne 2.11 yrs and Tami



Cale 3.3 yrs, Evenne 2.11 yrs, Mia R. 2.6 yrs, Dee Dee 2.9 yrs, Olivia 3.6 yrs

On September 15, 2016, we added popcorn kernels in our sensory bin and some measuring cups and measuring spoons. The children spent many hours in this bin, enjoying and scooping the kernels. Brooke discovered that eight spoons full of kernels fit into one of the measuring cups and that four cups of kernels filled the bucket.



Cale 3.3 yrs, Brooke 2.9 yrs, Dee Dee 2.9 yrs,
Maya 2.7 yrs and Carson 3.1 yrs

After having corn on the cob one day for lunch, we decided to add some to our environment. The children used the corncobs in their play. Rockston said it was hard to pick the kernels off with his fingers so he thought he would try with his teeth but that didn't taste very good.

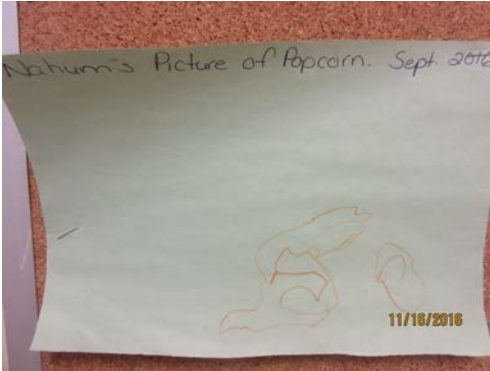


Mia R. 2.6 yrs and Rockston 2.9 yrs

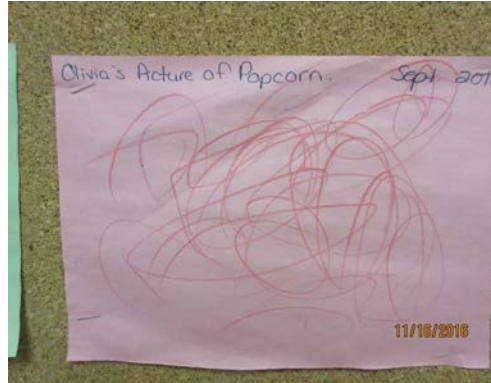


Mia R. 2.6 yrs and Rockston 2.9 yrs

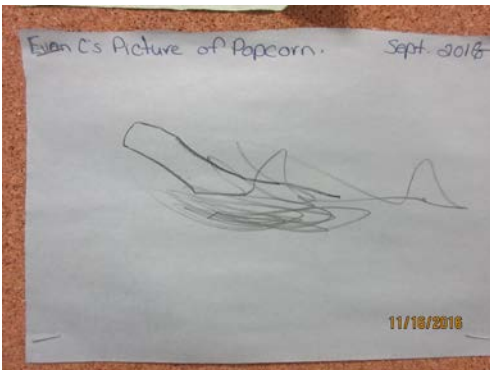
We asked the children to draw us a picture of what they thought popcorn looked like. We provided them with paper and crayons to make their sketch.



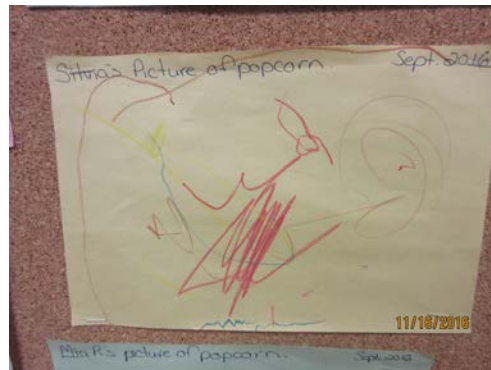
Nahum 3.10 yrs



Olivia 3.6 yrs



Evan 3.5 yrs



Silvia 3.1 yrs



Mia R. 2.6 yrs



Oliver 3.8 yrs

On September 22, 2016, the teachers had a discussion with the children about what they thought might happen if they planted a corn kernel. Would it grow? What would it grow into? What would it need to grow? How long would it take to grow? Would we be able to eat it? The children decided this might be fun to try so we took some of our popcorn kernels and planted them in soil. We watered them and hoped that one day they would start to grow.



Evan 3.5 years and Cale 3.3 years

One week after we had planted the popcorn kernels in the soil we checked to see if it had grown. After measuring with a ruler, we discovered that the kernels had grown from seeds into a plant that was 7.5 cm tall. The children wanted to plant more kernels and decided to try something different. We planted some kernels in orange paint and water, some kernels in a wet paper towel and some kernels in a damp j-cloth.



Evan 3.5 yrs and
Brooke 2.9 yrs



Carson 3.1 yrs, Brooke 2.9 yrs
and Evan 3.5 yrs



Carson 3.1 yrs



Brooke 2.9 yrs, and Carson 3.1 yrs

On October 6, 2016 we measured our plants to see if anything had grown from the week before. The kernels we had planted in a wet J-cloth had grown to be 2 cm tall. The kernels planted in the wet paper towel had grown to 3 cm tall. The kernels in soil had been 7.5 cm the week before and they were now 22 cm tall. That was huge growth in one week; the children could not wait until the next week to see what would happen. The kernels we planted in water and in orange paint have not grown yet. The children said they want to see what happens next week.



Brooke 2.9 years, Jennifer 3.2 years



Brooke 2.9 years



On Thursday October 13, 2016 we measured our plants again to see if they had grown in the past week. The kernels in the J-cloth had grown from 2cm to 9cm. The kernels in the soil had grown from 22 cm to 13.5 inches and the kernels in the wet paper towel grew from 3 cm to 7 cm this week. The kernels in the water and in the orange paint still did not grow. The children predict that they will grow and will wait to see what will happen next week.



Maya 2.7 years, Olivia 3.6 years and
Cale 3.3 years



Maya 2.7 years and Dee Dee 2.9 years

On Thursday October 20, 2016 we measured our plants again to see if they had grown. The kernels in the J-cloth had grown from 9 cm to 17.5 cm. The kernels in soil had grown from 13.5 inches to 14.5 inches. The kernels in the wet paper towel had grown from 7 cm to 12.5 cm. Our plants kept growing taller. The kernels in the water and in the orange paint have not grown. The children decided that they would not grow and we should throw them out.



We added provocations to our dress up centre and the children decided to set up a popcorn stand. We provided popcorn buckets, cotton balls, tickets for the popcorn, play money, an air popper, paper and crayons.



This summer as part of the infant room project, they planted a garden. In their garden, they planted corn. On September 30, 2016 at the end of the growing season, Jacquie took a group of children to the garden to dig up the corn stalks to add them in with the corn stalks that were in the room. Jacquie took Oliver, Olivia and Silvia from PS1 and Avery and Nolan from PS2 to dig up the corn. Each of the children was given a garden trowel to use to dig with. The children quickly discovered that the corn was harder to get out of the ground than they originally thought it would be. With Jacquie's help, the children got all of the corn stalks out of the ground.



Nolan 3.8 years, Oliver 3.8 years, Olivia 3.6

On October 17, 2016 Lisa started to sing a popcorn song with the children.

We Love Popcorn
(Sung to tune of Frere Jacques)

We love popcorn. We love popcorn.
Yes, we do. Yes, we do.
Love to see it popping. Love to see it popping.
Pop, pop, pop! Pop, pop, pop!

We love popcorn. We love popcorn.
Yes, we do. Yes, we do.
Love to hear it popping. Love to hear it popping.
Pop, pop, pop! Pop, pop, pop!

We love popcorn. We love popcorn.
Yes, we do. Yes, we do.
Love to smell it popping. Love to smell it popping.
Pop, pop, pop! Pop, pop, pop!

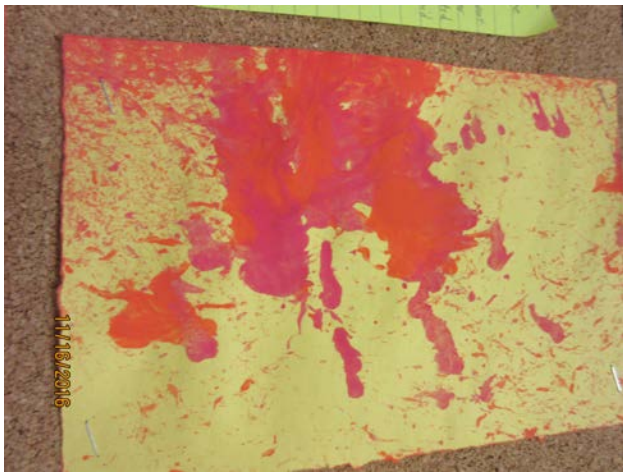
We love popcorn. We love popcorn.
Yes, we do. Yes, we do.
Love to touch the popcorn. Love to touch the popcorn.
Crunch, crunch, crunch! Crunch, crunch, crunch!

We love popcorn. We love popcorn.
Yes, we do. Yes, we do.
Love to taste the popcorn. Love to taste the popcorn.
Munch, munch, munch! Munch, munch, munch!

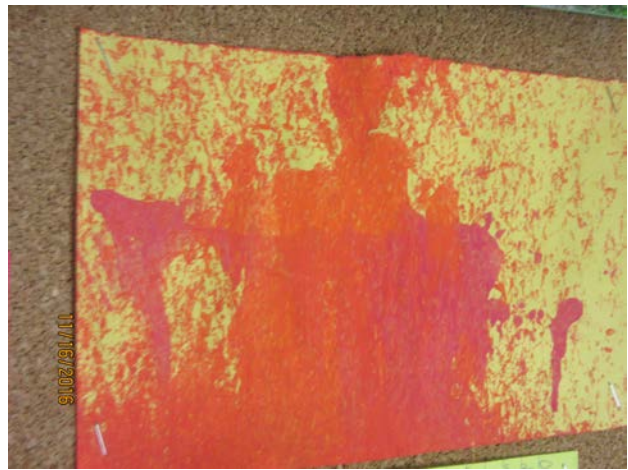
On October 18, 2016 Jacquie took three different sizes of measuring cups and filled them with popcorn. There was 1 cup, $\frac{1}{2}$ cup and $\frac{1}{4}$ cup. The children then took turns estimating how many pieces of popcorn were in each cup and Jacquie marked their guesses on paper. The children then helped Jacquie count the pieces of popcorn in each measuring cup. We discovered that there were 9 pieces of popcorn in the $\frac{1}{4}$ cup, 21 pieces in the $\frac{1}{2}$ cup and 40 pieces in the 1 cup. Olivia estimated that there were 40 pieces in the 1 cup so she guessed correctly.



The children were given several opportunities to use popcorn in their creative experiences. Amy put some popcorn kernels in a container with a piece of paper and some paint. Each child got to shake their container with the picture they were making in it. Once the lid was taken off the container, everyone was surprised because every piece of paper had a different pattern on it.



Maya 2.7 years



Brooke 2.9 years

The children also used corncobs with different colours of paint. The children dipped the corn into the paint and then stamped or rolled it onto the paper.



Mia R. 2.6 years



Dee Dee 2.9 years

Madison 3.0 years, Evenne 2.11 years





We decided to try an experiment that Lisa had seen on television. Do you think if we put popcorn kernels in pancake batter it will flip the pancake over when it pops? The pancake did not flip over on its own but the children enjoyed watching the pancake to see if it would flip. The kernels did not pop but the pancake was cooked through. Do you think this pancake will taste good? We asked the question, "What can we make with popcorn that will taste good?" Lisa researched on the iPad and found a recipe for popcorn bread. Amy gathered the ingredients and the children to make the bread. The first thing they had to do was pop 12 cups of popcorn and then put it in the blender. Some

of the children didn't like the noise it made and covered their ears. They helped to measure the flour, pour the oil, add the popcorn and stir it all up. Kim popped it in the oven and we could smell it baking all throughout the centre. The children were proud of their accomplishment and really enjoyed eating the bread with their stew that day for lunch.





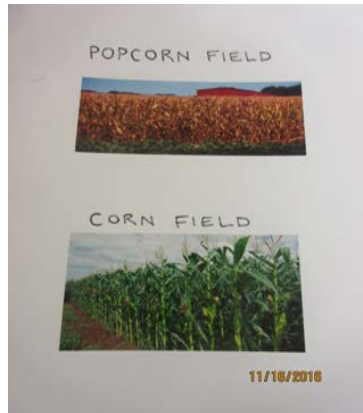
Jennifer 3.2 years, Brooke 2.9 years,
Olivia 3.6 years

On Wednesday November 16, 2016, we invited a special visitor to come to our classroom. Frankie, the store manager of Kernels in Conestoga Mall came in to talk to us about popcorn and brought some samples of the five most popular flavours for the children to try. Frankie told us that there are 20 different flavours of popcorn and that on a daily basis in his store they carry 16 different flavours. The five flavours of popcorn that Frankie brought in for us to try were classic butter and salt, caramel corn, cheese, cheesy dill and Christmas cheer which is a caramel flavour mixed with a raspberry caramel. Frankie told us that he uses three machines a day to make popcorn. He makes 30-50 pounds of popcorn a day. In a year, he makes enough popcorn to fill up our classroom three times. Brooke asked Frankie if they have rainbow popcorn (since rainbow popcorn is her favourite kind), he told us that yes, he has rainbow popcorn most of the year but the colours change depending on the time of year. The children asked him if he makes blue popcorn and he said yes that it is blue raspberry and they make it in January with a mix of caramel and they use the blue popcorn for baby showers and Blue Jays fans.



Evan 3.5 years, Cale 3.3 years, Dee Dee 2.9 years, Angelique 2.7 years, Brooke 2.9 years, Carson 3.1 years, Maya 2.7 years, Olivia 3.6 years and Cyrus 3.4 years

Frankie showed us the two different kinds of popcorn in both seeds and popped. The smaller kernels made butterfly popcorn, and the bigger kernels made mushroom popcorn. Frankie brought in some pictures to show us the difference between a cornfield and a popcorn field. All of the children said that they had seen a cornfield before. One of the questions we asked Frankie was how he made popcorn at his store. He told us that they use three different pieces of equipment: a glazer that they use for mushroom corn, an oil popper for butterfly corn and an air popper for mushroom corn.



After our taste testing with Frankie, we asked if the group if they liked popcorn and which one of the flavours was their favourite. We put the survey up on our classroom door and invited families to complete our survey as well.

* Please take a moment to *
let us know which is your favourite flavour of popcorn.

| Salt And Butter | Caramel | Cheese | BBQ | Cheese and Caramel Mix |
|-----------------------|-------------|------------------|-----|----------------------------|
| ✓ ✓ ✓ ✓ ✓ | ✓ ✓ ✓ | ✓ ✓ ✓ ✓ | ✓ | ✓ ✓ ✓ ✓ ✓ ✓ |

Do you like popcorn?

| Yes | No |
|------------|----|
| ### ### | |

We decided to take our popcorn fun outside so one day we popped a giant bag of popcorn and filled almost a whole garbage bag with it. The next morning, we filled a couple of sensory bins full of popcorn and we let the children go wild. The popcorn went flying in all directions. Cale, Olivia and Dee Dee were throwing the popcorn at each other and laughing the entire time. By the end of the

popcorn play there was no popcorn left in the sensory bins. We all sat very still and watched some birds swoop down and eat the popcorn.



Cale 3.3 years, Evenne 2.11 years, Jennifer 3.2 years, Maya 2.7 years, Olivia 3.6 years

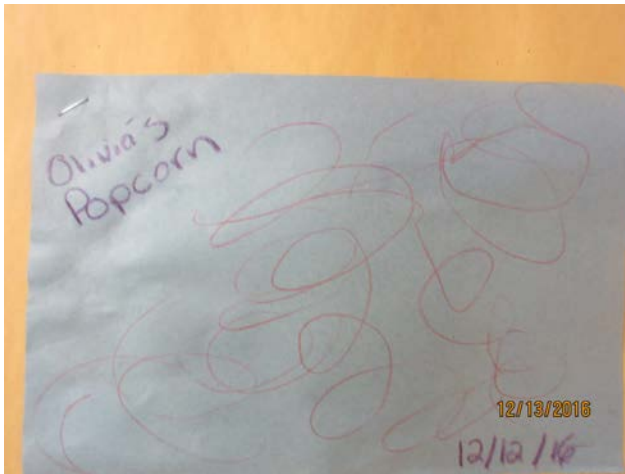


Olivia 3.6 years, Dee Dee 2.9 years and Jennifer 3.2 years

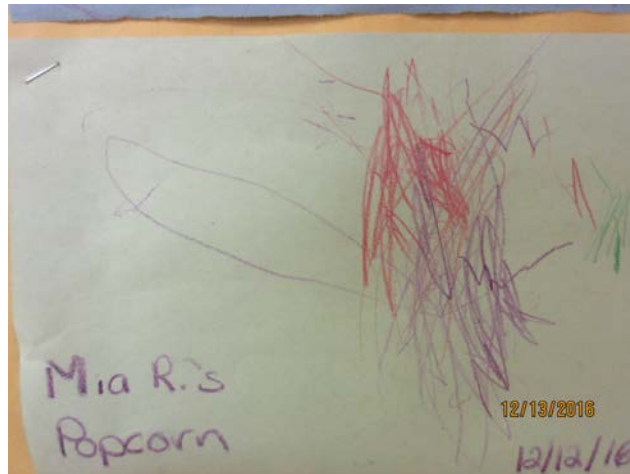


Cale 3.3 years

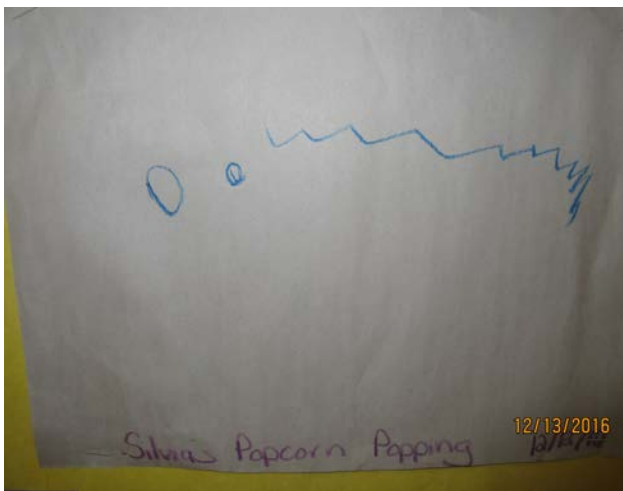
These are the final sketches that our children made of popcorn on December 12, 2016.



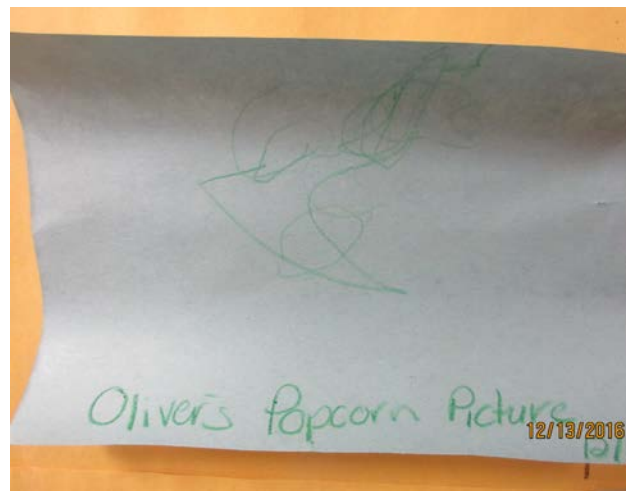
Olivia 3.6 years



Mia R. 2.6 years



Silvia 3.1 years



Oliver 3.8 years

Our list of vocabulary kept growing over the course of our project. Every week we learned a new word and we learned several new words after our visit with Frankie.

| Word | Definition |
|-------------------------|---|
| Kernels | A whole seed grain, as of wheat or corn |
| Unpopped | To remain as a kernel without any change. |
| Popped | To burst open with such a sound, as chestnuts or corn in roasting. |
| Microwave | An electrically operated oven using high-frequency electromagnetic waves that penetrate food, causing its molecules to vibrate and generating heat within the food to cook it in a very short time. |
| Popper | A utensil, as a covered pan, used for popping corn. |
| Mushroom | A shape of popcorn |
| Butterfly | A shape of popcorn also known as snowflake |
| Snowflake | A shape of popcorn also known as butterfly |
| Germ | The living part of the kernel |
| Endosperm | Is made up of soft and hard starch granules |
| Pericarp | The outer hull of the kernel which is made of cellulose |
| Dent corn or field corn | This is the most widely grown corn in the U.S. It is used primarily for livestock feed, but it is also used in some food products. It contains a mix of hard and soft starches that become indented once the corn is dried, thus the name "dent" corn. |
| Sweet corn | Sweet corn or corn on the cob is almost all soft starch and will never pop. It contains more sugar than other types of corn. Unlike other corns that are picked when the kernels are dry and mature, sweet corn is picked and eaten while the ears are in the immature milk stage and the kernels are tender. |
| Flint corn | Flint corn, also known as Indian corn, is similar to dent corn. It has a hard outer shell and is distinguished by a wide range of colours. It is mostly grown in Central and South America and used primarily for decoration in North America around harvest time. |
| Popcorn | Popcorn is a type of flint corn but has its own size, shape, starch level and moisture content. It has a hard exterior shell and a soft starchy |

| | |
|----------------------|---|
| | center. When heated the natural moisture inside the kernel turns to steam and builds up enough pressure that it eventually explodes. Other types of dried corn may burst open slightly when heated, but not like popcorn. Popcorn is unique in its tastes and ability to pop. |
| Glazer | A type of machine used to pop mushroom corn. It coats the corn with a clear, sugary glaze. |
| Air popper | Uses hot air to pop the popcorn. |
| Oil popper | A type of machine used to pop butterfly corn. A popcorn popper that uses oil. |
| Crazy stir popper | A type of machine that uses oil and slowly stirs the kernels around while heating them to make popcorn |
| Kernels popcorn shop | Franchised retailers of popcorn made fresh in a variety of flavours, with locations across Canada. |
| Husk | The dry external covering of certain fruits or seeds, especially of an ear of corn. |
| Hair | Long strands of silky material. |
| Corn stalk | The stalk or stem if corn, especially Indian corn. |
| Corn field | A field in which corn is grown. |
| Recipe | A set of instructions for making or preparing something, especially a food dish. |



For our Christmas gift to our parents this year we coloured popcorn kernels with red and green food colouring. The children placed the desired amount of kernels into a glass jar. Next the children added some sequins to the jar. They finished off the gift by placing a tealight candle on top of the kernels. They placed some decorative tape around the top edge to add some colour. The children then made a card and a bag for their gift to go into. All of the children were excited to give the gifts to their parents when they came in for the pop in popcorn day.

Dee Dee 2.9 years

Phase 3: Concluding the Project

Our popcorn project has been a blast for all of the children in our room. We have had two final events for our project, the first was when we had our special guest Frankie come in from Kernels to talk to everyone about popcorn and to bring us some samples of different popcorn flavours. He was very informative and helped to answer the remaining questions on our board.

The second final event that we had was a, “Pop-in Popcorn Day” for our parents on Thursday December 15, 2016, to show them what we have been working on this fall. Parents were invited in to come and look at our project board with their children and explore our project through the documentation we had posted. The children showed their parents their favourite part of the project. We had many parents come and explore the project. Many parents commented on how much we had learned with the children about popcorn in such a short time.

Teacher Reflections

Jacque:

Our children had a true interest in this topic. They asked many great questions and I have enjoyed exploring this project and learning as much as I have. When I hear the children talking about the different types of kernels or showing how popcorn is made, I am extremely proud of what they have accomplished this fall. Our children now have more knowledge about popcorn than most adults do. One of the areas that expanded farther than I thought it would, was the growth of the popcorn kernels. We planted the popcorn kernels in soil but the children wanted to plant it in more areas to see if it would grow. We ended up having it planted in paint, in water, in a wet paper towel and in a wet J-cloth. This was all in addition to the original planting in soil. This was a true reflection of their curiosity being reached as they watched week after week to see what would grow and what did not. After four weeks, the children determined that the kernels in the paint and in the water were not going to grow so they decided we should throw them out. Everything else did grow and grew more than I ever expected it to. We were measuring the plants on a weekly basis using centimeters. After four weeks we had to switch to measuring the plant in soil with inches, it had grown that tall.

Lisa:

The preschoolers had a lot of fun with the popcorn project, from eating popcorn to crafts and planned activities. The favourite activity was when Frankie from Kernels in Conestoga Mall came in and showed the children two different sizes of kernels and talked to the children about where the kernels came from. He told them how they make the popcorn in his store. The best part of Frankie's visit was when they got to taste the top five selling flavours in the store. The sensory bin filled with kernels was also a popular area for the children. They had so much fun measuring, pouring and scooping the popcorn kernels, even if most of the kernels landed on the floor. They got to paint and make crafts out of the husks, corn cobs and kernels. We planted kernels in soil, a wet paper towel, in a j-cloth and in paint. We were able to watch them all grow except for the kernels in paint. We had fun pretending to be popcorn popping around the room. One of the most popular activities was when we popped lots of popcorn and took it outside in two large sensory bins and got to play in it and to throw it at teachers and friends. Then everyone sat very quietly on the sandbox and watched as the birds came and ate the popcorn. If you were to ask the children what their favourite part of the project was it was eating all the yummy popcorn that we made.

Amy:

I joined in on the project about halfway through and the children were excited to tell me everything they had learned so far. I enjoyed watching how excited the children were about popcorn. One of my favourite activities that we did was making a loaf of bread with popcorn. The children enjoyed measuring out the ingredients and mixing it all together. They showed a sense of wonder trying to figure out how it would stick together. Through the many different activities, I observed that the children were able to develop a sense of well-being, engagement, expression and belonging as we explored this topic. I enjoyed watching the children develop and gain knowledge as well as being active participants in this project. I enjoyed learning alongside the children while exploring different activities. Thank you to our children for showing an interest in something that turned into a learning experience for everyone.