

The Project Approach to Learning at

RisingOaks
Early Learning | St. Matthew

Project Name: Tin Cans

Age Group: School-age 2 (6yrs - 8yrs)

Project Start Date: November 2021

Project End Date: March 2022



Background

This topic was started at the beginning of November 2021 and continued until March 2022. The children who were involved in this project were between the age of 6 years and 8 years old. The staff that were involved were Anna and Rukmanie.

Phase 1: Beginning the Project

This project started during the Fall season when the children were showing interest in Fall creations. As we walked past the recycling bin the children always commented on how many tin cans and other containers were thrown out for recycling. One day Lauren asked, "Can we get some stuff from the bin to do crafts?" With this being asked, some of the children took tin cans, milk cartons and plastic containers which they washed and made creations with by using tape and hot glue. The children wanted to make a scarecrow, when Dylan said, "There are no leaves on the ground as yet to stuff the scarecrow." Then Michael added, "Can we use something else to stuff the scarecrow?" Wyatt then asked, "Can we use something else to make the scarecrow?" Ethan then answered, "We can make a smaller different kind with the tin cans." So, we decided to use a very large tin can that was found in the recycling bin. The children covered the can with brown paper and used some Easter grass as the straws, then they added a hat and some of the other features to complete the scarecrow. When it was closer to Halloween, we used many different types and sizes of tin cans to make Halloween characters. Some of the cans were painted to make ghosts, witches, Dracula, pumpkins and even Frankenstein. After that the children were constantly using tin cans so, we decided to ask the cook (Brenda) to save us some of the tin cans for us to use for other different activities. The interest in using tin cans was growing so we decided to explore this further as a Tin Can project. We had a discussion on what we know about the topic and what we want to know and researched who we need to use as our expert to answer some of our questions to expand our knowledge on Tin Cans.



Figure 1 These are some of the creations that were made with tin cans



Figure 2 This scarecrow was also made with tin cans

What do you know about this topic?

- Tin cans are made with metals
- Tin cans can be reused and recycled
- Tin cans comes in different sizes and shapes
- Tin cans can be painted and decorated to make crafts
- Tin cans can be used to put things to organize them
- Tin cans can be used for storage
- Tin cans can be bought at the store with food in them

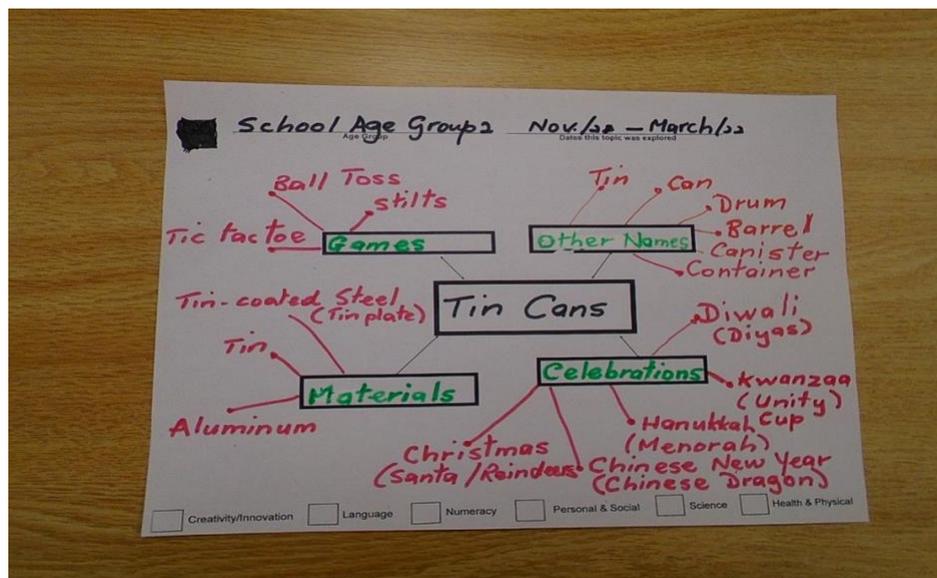
What do you want to know about this topic?

- How can we reuse tin cans in our program to make things?
- What kind of craft can we make with tin cans to celebrate holidays?
- How are tin cans made?
- What games can we make with tin cans?
- What happens to tin cans when they go to the recycling plant?
- What are some different names of tin cans?

Who can we ask about this topic?

- Google (iPad)
- Waterloo Region Waste Management
- Allied Cans Limited

Web



Phase 2: Developing the Project

Formal Meaning – Google

A tin can, also called a tin or a can, is an air tight container that is made of metal and is used for the distribution or storage of goods.

Informal Meaning

A tin can is a metal cylinder you can buy at the store with food.

A tin can is a metal container that you can open on top.

Vocabulary

Stilt, windchime, container, Metal, reuse, canister, Kwanzaa, Hanukkah, Cans, Diwali, Menorah, cylinder, Steel, aluminum, barrel, Unity Cup, celebration, tin

Surveys

| SURVEYS | | |
|--------------------------------|-----|----|
| Do you reuse tin cans at home? | | |
| Names | Yes | No |
| William | ✓ | |
| Esakei | | ✓ |
| Avery | | ✓ |
| Olivia | | ✓ |
| Hubert | ✓ | |
| Dylan | | ✓ |
| Cameron | | ✓ |
| Michael | | ✓ |
| Oliver | | ✓ |
| Thomas | | ✓ |
| Ethan | | ✓ |
| Mingus | ✓ | |
| Caden | | ✓ |
| Mason | ✓ | |
| Wyatt | | ✓ |
| Will B | ✓ | |
| Nicholas | | ✓ |
| Lauren | | ✓ |
| Sophia | ✓ | |
| Theresa | | ✓ |
| John | | ✓ |
| Xavier | | ✓ |
| Valentina | | ✓ |

| Where do tin cans come from? | |
|------------------------------|--|
| Ethan | "Costco" |
| Mason | from the grocery store. "They have food in it" |
| John | "grocery store" |
| Mingus | "pieces of metal. you shape it like a cylinder" |
| Nicholas | "in a new house" |
| Valentina | "I don't know" |
| Hubert | tin can factory |
| Oliver | "melt metal, carve it, put it in the freezer, then warm it up" |
| Arran | "same as Oliver" |
| Michael | "grocery store and like Oliver said" |
| Lauren | from food and metal |
| Will B | from metal |
| Theresa | "I don't know" |
| Avery | "I don't know" |

Guest Expert – Allied Cans Limited

Questions we asked the Expert

- How do you shape the cans?
- Why do they have bumps on them?
- Where do you get the materials to make the cans?
- Can people buy the cans right from your company?
- What are the different types of metal you use to make the cans?

Zoom with Guest Expert

A representative from Allied Cans Limited joined us over a Zoom call as our guest expert to show us the process of making tin cans. We watched a video of the assembly line of the tin cans, pausing to explain each step and allowing opportunities for the children to ask questions. As the presentation continued, the children asked their questions and were given the answers by the presenter. We learned that cans are shaped by bending a flat sheet of metal to form cylinders, then they are welded and cured, followed by flaring the cans to put on the lids. The cans are then sealed by a mechanical process, which led Xavier to ask, "Why do the cans have numbers?" The presenter then explained that it is a way to identify leaky cans which they can remove easily. Another way to identify leaks is by putting the cans in water and checking for bubbles. We also learned that Allied Cans Limited only uses tin plates to make their cans, but other common materials are aluminum, copper and stainless steel. An interesting fact we learned is that Allied Cans Limited provides cans for Home Depot as well other companies. Overall, we learned a lot about tin cans and how they are made. The process was scientific and we had electronic, visual aid to demonstrate this for us.



Figure 3 The children are watching the Guest speaker on Zoom



Figure 4 The process of making tin cans by Allied Cans Limited



Figure 5 Some of the different types of cans being made by Allied Cans Limited

Celebration

Diwali

Diwali is a Hindu festival that was celebrated on November 14, 2021. During Diwali, Hindus around the world celebrate with family and friends by having fireworks, listening to music, dancing, making and eating delicious food. They also light beautiful earthen lamps called diyas. We learned about the legend of Diwali which is also known as the festival of lights. It is celebrated using diyas which are beautifully decorated oil lamps. We used tuna fish cans with glittery paper and gems to make our diyas. The children hot glued gold paper on to the cans and then added some gems for decoration. They then cut yellow paper and attached it to the decorated cans for the lights on the diyas. We watched a video of a Diwali celebration to understand the concept and experience of Diwali. Dylan asked, "What do they put in the diyas to make it light?" Wyatt commented, "We can look it up on the iPad." So, we did some research and learned that they use clarified butter called ghee with wicks that are submerged into the ghee. Lauren said, "I like the music." After looking at the display of the lit diyas as they illuminated the houses, Sophia added, "Wow the diyas look pretty." Theresa said, "It is very sparkly and bright." Hubert then commented, "The food looks delicious." Then some of the other children agreed in unison.



Figure 6 Lauren is hot gluing gold paper to tuna fish cans



Figure 7 Valentina is hot gluing gems on the tuna fish cans



Figure 8 Wyatt is adding finishing touches to the diyas



Figure 9 This is a display of our finished diyas

Hanukkah

We made a menorah with tin cans to celebrate Hanukkah. First, we started by watching a video of a Hanukkah celebration and the lighting of the Menorah. While we were watching the lighting of the Menorah, Michael commented, "That is a lot of candles." Ethan then asked, "Do they light one every night during Hanukkah?" Sophia answered, "I think so." The children then decorated some tin cans with paper and glue when Wyatt said, "If you put your hands inside the can then you would not have glue on your hands." Then Minas asked, "How many candles do we need to make?" Dylan answered, "I think eight because Hanukkah is celebrated for eight days." So, we counted how many nights the menorah was being lit and realized that it was nine nights. Then Dylan said, "Oh yes I forgot that you have to count the night of the last day also because that is when they have the big party and all the good food." When the children were finished, they nailed the bottoms of red plastic cups to a piece of a log and then attached the decorated tin cans to the cups. Then Lauren said, "We need to make the flames." So, Lauren, Minas, Valentina and Ethan cut yellow paper and made the flames which were attached to the tin cans with some hot glue.



Figure 10 Thomas is nailing plastic containers to a piece of a log



Figure 11 Lauren is decorating tin cans for the Menorah



Figure 12 Valentina is hot gluing the flames to the candles



Figure 13 This is a display of the finished Menorah for Hanukkah

Santa and his Reindeers

We were able to use tin cans to help us celebrate diversity and cultural awareness. The children took turns hot gluing materials on a large tin can to make Santa when Theresa said, “He needs eyes, ears and a mouth.” Then Wyatt added, “He needs fluffy white hair.” As the children started to add the fluff Lauren commented, “I think we need to put the white fluff all around his head.” When the children were attaching the hat Thomas said, “It says naughty and nice. I think I’m on the nice list.” This sparked a discussion on behaviours and consequences. Minas then quickly said, “I am gluing fluff on the nice side. I don’t want to be on the naughty list.” Michael added, “Me neither so I am doing the nice side too.” The children then started to work on the reindeers. When Michael asked how many reindeers we would need to make, Dylan sang the song and counted then answered, “We need 9 reindeers.” Each reindeer was decorated by a different child to portray their uniqueness. Mason said, “We need brown paper for the cans.” Dylan added, “I need a red pompom to make Rudolph’s nose.” Dylan and Hubert collected some twigs from outside to make the antlers of the reindeers. Together the children were able to finish making Santa and his reindeers.



Figure 14 Will B. is hot gluing tin cans together to make Santa



Figure 15 Wyatt is hot gluing the beard onto Santa



Figure 16 Wyatt and Valentina are gluing brown paper on tin cans for Santa's reindeers



Figure 17 This is a display of Santa and his reindeers

Kwanzaa

We also watched a video on the history and how this festival is celebrated. After watching the video, we learned that candles are an important part of this celebration. We also had a discussion on the colours that are associated with Kwanzaa. Minas said, “Red, green and black.” Dylan reminded us and added, “The green represents the fields and harvest.” Then William said, “The red is for their blood that unites them.” Then Minas proudly added, “The black is for the people. I remember that because they are from Africa just like my family.” We also learned about the Unity Cup that is used to share a drink during the celebration which signifies bringing people together. We decided to make some Unity Cups with tin cans. The children used different sizes of tin cans and hammered very large nails into them to secure them together when Will said, “This is hard because the nail is so big.” Ethan and Minas offered to help and were able to finish the job. The Unity Cups were then spray painted with red, green and black paint when Ezekiel commented, “I know why we are using red, green and black paint because they are the colours for Kwanzaa.” The children then strung beads and hot glued them to decorate the Unity Cups. When the Unity Cups were finished Minas asked, “Can I have my picture taken with the Unity Cups seeing that my family is from Africa?” His wish was granted which brought a big smile on his face.



Figure 18 Lauren is nailing tin cans together for the Unity Cups



Figure 19 Wyatt is spray painting the attached tin cans



Figure 20 Minas is decorating the Unity Cups with beads



Figure 21 This is a display of the Unity Cups

Chinese New Year

We started making a Chinese Dragon to celebrate Chinese New Year and also to incorporate our Tin Can project. First, we started by watching a video of the dragon dance during a Chinese New Year celebration and made Chinese lanterns, hats and rattle drums. The children then painted different sizes of tin cans with red and yellow acrylic paint when Minas commented, "I know why we are using red and yellow paint because the flag of China is red and Yellow." After that they punched holes in the cans with a hammer and nail then used twine to string them together when Hubert enquired, "What are we going to use for the head?" There were many suggestions from the children so the next day we took a red flower pot and cut it to form the head of the dragon. The children then cut white paper for the teeth. Oliver then said, "We need to put some fire into the mouth." Then Michael added, "Oh cool, it will be like the fire-breathing dragon." The children then glued red and yellow tissue paper to make the fire in the mouth. The dragon was completed and the children were waiting in anticipation to celebrate Chinese New Year when Wyatt asked, "Why are we doing a dragon dance when it is the year of the tiger?" Then Dylan answered, "They always do the dragon dance no matter what animal it is." The children wore their Chinese hats and took turns dancing with the dragon while the others shook their Chinese rattle drums and paraded with their lanterns.



Figure 22 Minas is painting tin cans with red and yellow paint.



Figure 23 Will B. is nailing holes into the painted tin cans



Figure 24 Valentina is hot gluing the teeth onto the dragon's mouth



Figure 25 The children are doing the Dragon dance to celebrate Chinese

New-

Year with the dragon that they made with tin cans

Games

Stilts

We used tin cans to make stilts. First, the children decorated the four large tin cans with coloured paper then they wrapped tape around the cans to protect them. They then used a hammer and nail to put holes into the cans. When Ethan said, “This nail is so long that we are not going to get hurt when we are hammering it.” Then Theresa added, “I know how to use a hammer.” We then took nylon ropes and strung them through the cans. Will said, “I know that these are called stilts because we use them in the gym at school.” The stilts were finished and we took them outside to try using them. The children took turns to walk with the stilts. They even made teams and had a race when Avery said, “This is easy to use.” Michael then said he needed some help but with some encouragement he was able to master his skill of walking with the stilts.



Figure 26 Will B. is spray painting tin cans to make the stilts



Figure 27 Wyatt is stringing and tying ropes on the cans to make the stilts



Figure 28 Valentina is trying to balance herself on the stilts



Figure 29 Ethan is using the stilts in the gym

Ball Toss

Ball toss is another game we decided to make. First, we painted a piece of plywood with acrylic paint. Avery said, "The green paint is so bright." Then Sophia added, "I also like the orange because it looks like the sunset." The next day Oliver, Thomas, Will, Lauren, Michael, Wyatt, Valentina, Minas and Nicholas worked together to decorate all of the cans with craft paper and glue when Michael asked, "How are we going to make a ball toss with these tin cans?" Then Wyatt answered, "I think we will have to throw the ball into the cans." Then Minas who seemed very confused asked, "So why do we need the board?" Oliver then answered, "To put the cans on." The next day the children took turns using a hammer to nail the cans onto the board. As Ethan was trying to nail the cans he commented, "This is hard to nail because I don't want to hit my fingers." So, he then used the pliers to grip the nail. With a lot of patience and trial he was able to nail a few cans onto the board. Minas, Will, Oliver, Michael, John, Lauren and William finished nailing the rest of the cans into place. Minas volunteered to paint the numbers on the board. It was time to play the game so we went to the gym and the children were assigned into two groups. When Dylan enquired, "Why is the large can zero when the tiny tuna fish can is 30 points? Not fair!" We then used golf balls for the toss. At first there were some disappointments when zeros were scored but then Minas screamed, "I scored 30 points, yeah!" Then Michael scored 10 points and with great confidence the children started to tally their scores.



Figure 30 Avery is painting plywood to make a ball toss game



Figure 31 Wyatt is decorating some tin cans for the ball toss game



Figure 32 Ethan is nailing the tin cans to the board for the ball toss



Figure 33 Hubert is aiming to get the golf ball into the tin cans

Tic Tac Toe

The children were enjoying all the games that they made with the tin cans and also, they spent a lot of time playing Tic Tac Toe so we decided to make a very large version of Tic Tac Toe with a piece of tarp and very large tin cans. First, the children picked purple and black paper to decorate the cans. They then glued the black paper on five cans and the purple paper on another five cans. While they were doing this Avery asked, "Why do we need five cans each?" Then Lauren answered, "That is how many pieces you need to play Tic Tac Toe." Michael then added, "I have never seen a Tic Tac Toe with so big pieces." Then Thomas asked, "Does that mean the board will also be very big?" Oliver answered, "Of course silly, how will the pieces fit if the board is small?" The next day the children were surprised to see the big tarp that will be used for the board. Cameron commented, "We can even use this in the gym or outside, it is so big." Valentina, Wyatt, Oliver, Michael, Will, Ethan, Avery and Mason took turns taping the tarp with blue duct tape to make the board for the Tic Tac Toe. When it was finished, we went to the gym and played our Tic Tac Toe game. The children were put into teams and showed lots of enthusiasm while cheering and encouraging their team members as they were playing.



Figure 34 Will B. is decorating tin cans for the Tic Tac Toe game



Figure 35 Valentina is taping the lines for the Tic Tac Toe game board



Figure 36 Hubert is using blue duct tape to make the lines



Figure 37 Ethan and Will B. are enjoying a game of Tic Tac Toe

Phase 3: Concluding the Project

Final Event

We realized that our project came to an end because all of the questions were answered and the children were starting to lose interest in the topic. For the final event we held a competition with some of the games we made. We brought in 3 games, Ball Toss, Stilts and Tic Tac Toe. The children were divided into two teams and all got to compete with someone in each of the games. "I don't want to play," said Dylan but, as the games began, he jumped in with a smile. An educator asked him, "Are you glad you decided to play?" He responded, "Yes." As the children played, their team members cheered them on. "Go Lauren," her team screamed. "Yes! We won, we won!" Oliver exclaimed. When playing the Tic Tac Toe, the children helped each other to strategize. "Go there, go there," Xavier shouted, while Mason yelled, "Block him!" When William won his game of Tic Tac Toe his teammate Dylan said, "It is a diagonal line." Together we added up all the scores and announced them. All the children finished the experience with smiles on their faces. In the end they all were given a certificate and some treats for a great performance and sportsmanship as we celebrated together.



Figure 38 They children are having a Tic Tac Toe competition



Figure 39 This is the Ball Toss competition for the final event



Figure 40 This is the Stilt competition for the final event



Figure 41 This Tic Tac Toe game is also part of the final event

Teacher Reflections

Anna

At the beginning of this project, I didn't think there was much for me to learn about tin cans. I knew they were made in factories and I always reused and recycled them. However, when discussing questions with the children, they came up with questions that I was curious to know the answers to. For instance, the materials to make the cans come to the factories in large flat sheets on skids. I also learned how factories do quality checks on their cans, which I found very neat. This experience reminded me that there is always more to learn and further confirmed my belief that children know so much and have great questions. This project gave the children the opportunity to practice team work while learning to support and encourage each other.

Rukmanie

During this project the children were able to develop cultural awareness and celebrate diversity by using tin cans to make items that are significant to festivals around the world. We did a lot of research and together we were able to learn about how we can reuse and recycle tin cans to save them from the landfill. This project also helps to bridge the gap from home to school by having the children practice reusing and recycling at home. We were able to create many different types of games that we can implement into our program. These games provided an opportunity for the children to develop skills in turn taking, critical thinking, eye-hand coordination, team building and most of all good sportsmanship. Throughout the project the children were also able to share ideas, ask and answer questions. They made choices and also experienced and used a variety of materials they had never used before, such as spray paint, a saw, a hammer and nails. There was also a sense of pride during the project especially when the activity was a part of their own culture and country of origin. They were also able to experience the process of how tin cans were made from the raw material to the finished product through a Zoom call. Together we were able to successfully finish our Tin Can project by exploring and answering all our questions.