

The Project Approach to Learning at

RisingOaks
Early Learning

| Lincoln Road

Project Name: Sharks and Whales

Age Group: Preschool 2 (2.5 – 4 years)

Project Start Date: March 24, 2022

Project End Date: June 16, 2022



RisingOaks
Early Learning

Growing minds through play

Background

The Project started on March 4th, 2022 with Mary Klug RECE, Nidya Oosterveld RECE, Melissa Miller RECE. It finished in June 2022. We had a group of 22 children whose ages ranged from two years to four years old. We noticed that our group was interested in animals but mostly the sea animals. By the end of February, the children seemed to want either a shark or whale and would wait patiently for their turn with them. After over hearing a few conversations of food or size and a few small arguments of who was right, Mary and Nidya decided to ask the children if they wanted to learn more. Melissa joined this project mid point.

Phase 1: Beginning the Project

With some COVID restrictions being lifted at the beginning of March, the educators began to bring out toys that had been placed away for safety measurements. One of them was a sensory spool that children from 2019 had built, just before going into lockdown. The spool has four levels, the bottom one is cover with sandpaper and rocks to represent a beach, the second one is painted blue and covered with blue beads and seashells to represent water while the other two top levels are covered with grass to represent a forest or a jungle. Nidya also added two sharks and two boats as props for children to explore in these areas.

Logan and Billy were some of the first children coming to see this area and to explore it. They pretended that the animals were swimming over the beads and bumping into the boats to make them tip.

Alex and Ari also played here making each animal the mommy and the daddy looking for food. As the days went by, the sensory spool was always busy with children playing and waiting for turns to play with the sharks and the boats.

Noticing that the children were enjoying this area, but the space was small, Mary created two sensory aquariums adding rocks, leaves, sea animals, coral pieces and shells. These loose parts were placed inside a large cardboard box which now became the aquarium. Here, the children had the opportunity to set up their own aquarium for their sea animals to swim in.



One day, Alex was playing in the sensory aquarium and came to Nidya holding one of the sharks, "What's this shark called?" He asked. "I don't know its name, but we can look it up in the iPad," she replied. It was not difficult to find the answer, as this shark had visible spots on his body. At this point, Daniel, Ari and some other children had also come close to look at the pictures of the shark in the iPad. They discovered that it was a whale shark and it is the biggest shark in the world. After looking at some pictures, Ari asked to see whales as well. We continued reading and looking at pictures until everyone else was awake, and it was snack time.

On Friday March 24, the children were wanting turns with the sea animals, especially the sharks and whales. Adding more into the block play for Alex and Ari, others came to play and the children starting sharing what they knew about sharks. Mary joined their conversation and asked Alex and Ari what they knew and if they could share it with her. Mary ended up with a large group of ten children all telling her what they knew.

Laila was interested in the babies. Alex said, "they don't have babies," and Ari replied, "They do." Ari went over to the table and brought back a tiny orca whale that matched his large orca one and said, "See, this is a baby." Alex said, "Ok. It is just a small one, not a baby." Mary suggested we could find out the answer as Laila inquired about it, and she would like to know the answer.



The first list below shows what the children know and the second chart shows what they want to learn.

WHAT THEY THINK THEY KNOW

- Alex - They eat fish
- Ari - Whales eat leaves
- Laila - They eat all their dinner
- Bentley - They like carrots
- Sophia - I don't know
- Daniella - I know lots
- Lily - They go in the water
- Billy - Hum, I don't know Mary
- Sathwik - Whales are bigger
- Freya - Teeth
- Jaden - Swim in the water
- Daniel - They swim at the beach
- Declan - Different
- Logan - Great whites eat dolphins, tiger sharks eat fish
- Isio - Don't know

Some of the children sat quietly listening to what their peers were sharing before they added in what they knew at the end of the conversation.

WHAT THEY WANT TO LEARN/QUESTIONS

- Sophia - What do they eat?
- Bentley - Does a whale eat a shark? How do they move? What makes them move?
- Alex - What are names of sharks? Where do they live? Not water live.
- Ari - Will a whale fight a shark?
- Lily - Do they all have teeth?
- Billy - How big are sharks and whales?
- Laila - Do they have babies, like my mommy?
- Sathwik - Is their daddies and mommies too?
- Freya - Do they bite?
- Jayden - Big big big?
- Daniella - How do the mommies feed the babies?
- Daniel - Names of sharks, one I know is "whales and shark."
- Isio - Pointed to the top fin, what is this?
- Logan - Do sharks sound like whales? I know Great whites do not eat people, but what sharks do eat people?
- Declan - Food to eat?
- Mary - How do whales and sharks protect their young? Blubber keeps them warm in cool temperature waters, but what happens in warmer waters with that blubber?
- Nidya - How they feed?
- John - Need to know more about the spout on the whales?

skills to draw whales and sharks based on what they have learned in the last few weeks. They demonstrated their knowledge acquired as they discussed the characteristics of these animals while drawing. They knew the parts, they knew about its habitat and they knew about their food and tried to represent all this knowledge in their drawings.

Below there are Alex's and Ari's first and second drawings.



On Wednesday April 11, 2022, the children worked alongside Mary on the meaning of some new words that related to sharks and whales creating some charts with this info. The first chart will be the children's words they knew about sharks and whales and the meanings for when we first started our project. The second chart will be new words and the child's definition before they learned the real definition to new words being added.

Words children know and their definition:

1. Shark - Is in the water
2. Whale - A big swimmer
3. Water - We drink it
4. Fin - To make air

New Words and definitions:

1. Jaw
 - a. Child definition: Teeth, for eating
 - b. Dictionary definition: Two sets of bones that form the framework for the mouth
2. Gills
 - a. Child definition: For wiggling. The stomach for food
 - b. Dictionary definition: An organ that enables them to obtain oxygen from the water
3. Skull
 - a. Child definition: Bones
 - b. Dictionary definition: The bones of the head
4. Fin
 - a. Child definition: For blowing air
 - b. Dictionary definition: A moveable wing like part of a fish's body
5. Blowhole
 - a. Child definition: A hole in the whale
 - b. Dictionary definition: A hole in the top of the whale's head for breathing
6. Tail
 - a. Child definition: For slashing. For wiggling
 - b. Dictionary definition: A rearmost part of an animal's body
7. Spine
 - a. Child definition: Something big
 - b. Dictionary definition: A backbone
8. Whale
 - a. Child definition: Big animals in the water
 - b. Dictionary definition: Any of an order of aquatic mammals that are shaped like a fish
9. Supporting rod
 - a. Child definition: A bar
 - b. Dictionary definition: Cylindrical bar of any hard substance, one of the sense organs

On Wednesday April 13, 2022, Mary placed an outline of a shark on the table with many anatomy parts. The first question she asked was, "what is this a picture of?" Right away Laila said "a whale," "ya ya a whale," Alex chimed in. When Mary asked Etta her thoughts, she said, "I am not sure but I think whale." Bentley, Daniella, Billy, Mila and Declan also said it was a whale, but Sophia took a close look and said "shark, it is a shark."

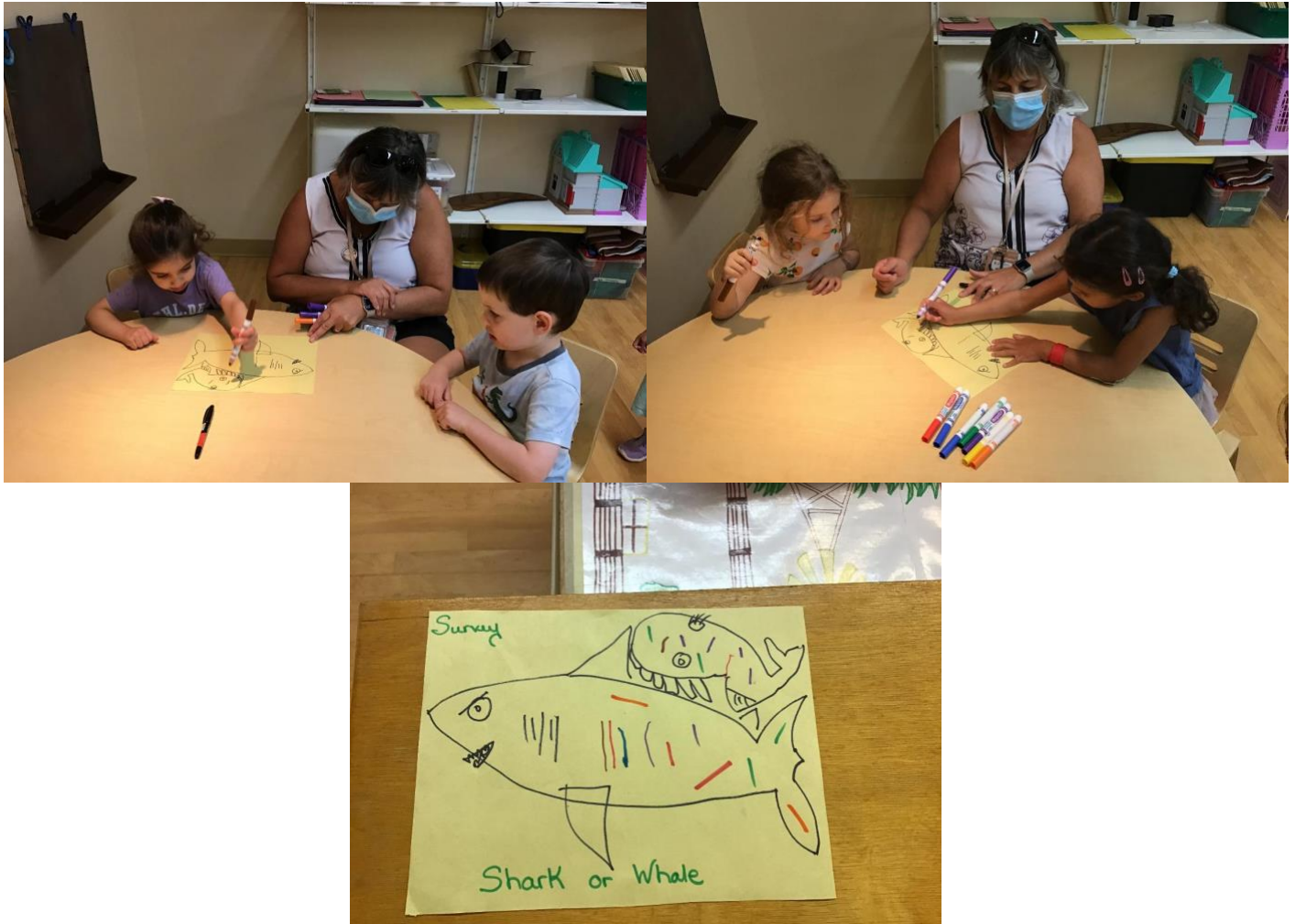
The children then rotated picking up a piece of the anatomy and placed it where they thought it should go on the outline. When the pieces were all placed on the outline, Mary asked "what does it look like now?" and the answer was still a whale. This is when Mary turned over another drawing but this one was a complete drawing of the shark's anatomy. Right away Etta said, "that is a shark," and Alex added, it has a big fin.

Now Mary asked the children if they could rearrange the pieces so it matched the other shark. Right away Alex, Etta and Laila started removing pieces and placed them in the correct spot while looking at the finished drawing. Daniella and Bentley had some great discussions at first. The children would then place the pieces into the puzzle while studying the finish drawing before making their final decision. All the children agreed once they saw Mary's finished drawing that it was indeed a shark. The final step to this activity was to compare the anatomy of a shark to the human anatomy. Here, Billy discovered that humans do not have a dorsal fin, but shared that he will have one when he becomes a shark just like the drawing.

We found that the similarities between shark and human and some things are a skull, teeth, jaw line, a spine, an anus, a pelvis and eyes. Sophia could recall that we do not have gills, or fins like a shark does.



The following week we worked on our survey. Children were asked what animal they liked the most, a whale or a shark. Mary made a picture with a shark and a whale and children made a mark inside on of them to indicate their choice. Sharks were the winners with 11 votes while the whales got only 8 votes. 16 children and 3 educators participated in the survey.



On Monday April 25, 2022, Mary's activity was on the names and sizes of some of the popular whales and sharks. We divided a big piece of paper into two sections one for whales and one for sharks. We discussed the names of whales first and documented their sizes on the paper. Mary then found and used an image chart on the iPad and showed the children the differences in sizes using these photos. This helped some children recognize the differences in length; however, a few children still seemed a little confused. Mary took the learning further by fostering their visual perception of a whale or sharks' size by using both the measuring tape and our personal bodies. Using the tape measure was one way to explore the length but the actual participating in being a whale was not only a fun moment for the children but appeared to help all children really put into perspective how long and big these mammals and sea animals are.



Once the activity was done, Maia spoke up and said, "If they are so big what do they eat?" "I guess we will have to research this and find out," Mary replied. The children then had the opportunity to explore the sharks and whales on the table for a while with one another.

This activity leads us onto a conversation about what they eat. Alex and Logan both agreed that both whales and sharks eat fish. When Mary asked what else they ate, the children answers were unanimous with "we don't know." Instead of using the iPad to research this with the children right away and writing it down on the same day, she sent them away to think more about this question and will regroup with some ideas at a later day. In the meantime, Mary did some research herself and prepared a hands-on activity for the children to do when they would regroup.

When we got together again the following week, most of the children's ideas were fish, leaves, maybe fruit, some might like chocolate and some might eat baby sharks.

Wednesday April 27, the activity was geared to have the children think once again about the food chain, and by using props, the children were then asked to take a guess where they feel that sea animal/mammal or coral reef they chose would go. Note the children did not know that there was a bucket full of sea animals/mammals under the blanket on the table.

The expectation was for the children to reach under the blanket, pull out an item from the bucket, inform us what they chose. For example, a seal, or fish etc. Next, they had to choose which tray it would go on. Would it be the shark or the whale? Many of the children were shocked when they pulled out sea animals/mammals from the bucket with some asking where the leaves and fruit were.

The children worked in groups of two where many conversations took place between them about where the item should go. Alex and Anyi had a great conversation about the lobster. When Anyi was asked what she had chosen, she said, "I don't know." She then turned to Alex and said, "What is this?" Alex replied, "It is a lobster." Here the two talked about the claws hurting and pinching and decided neither of them would eat a lobster. Mary assisted them and explained that both sharks and whales usually eat their food whole. Alex said whale and Anyi voted shark and placed it on the shark tray. Anyi was correct sharks eat lobsters.

As the activity continued, some of the items were easy to place like the fish; but a shark, octopus, and string ray were a little confusing to many.



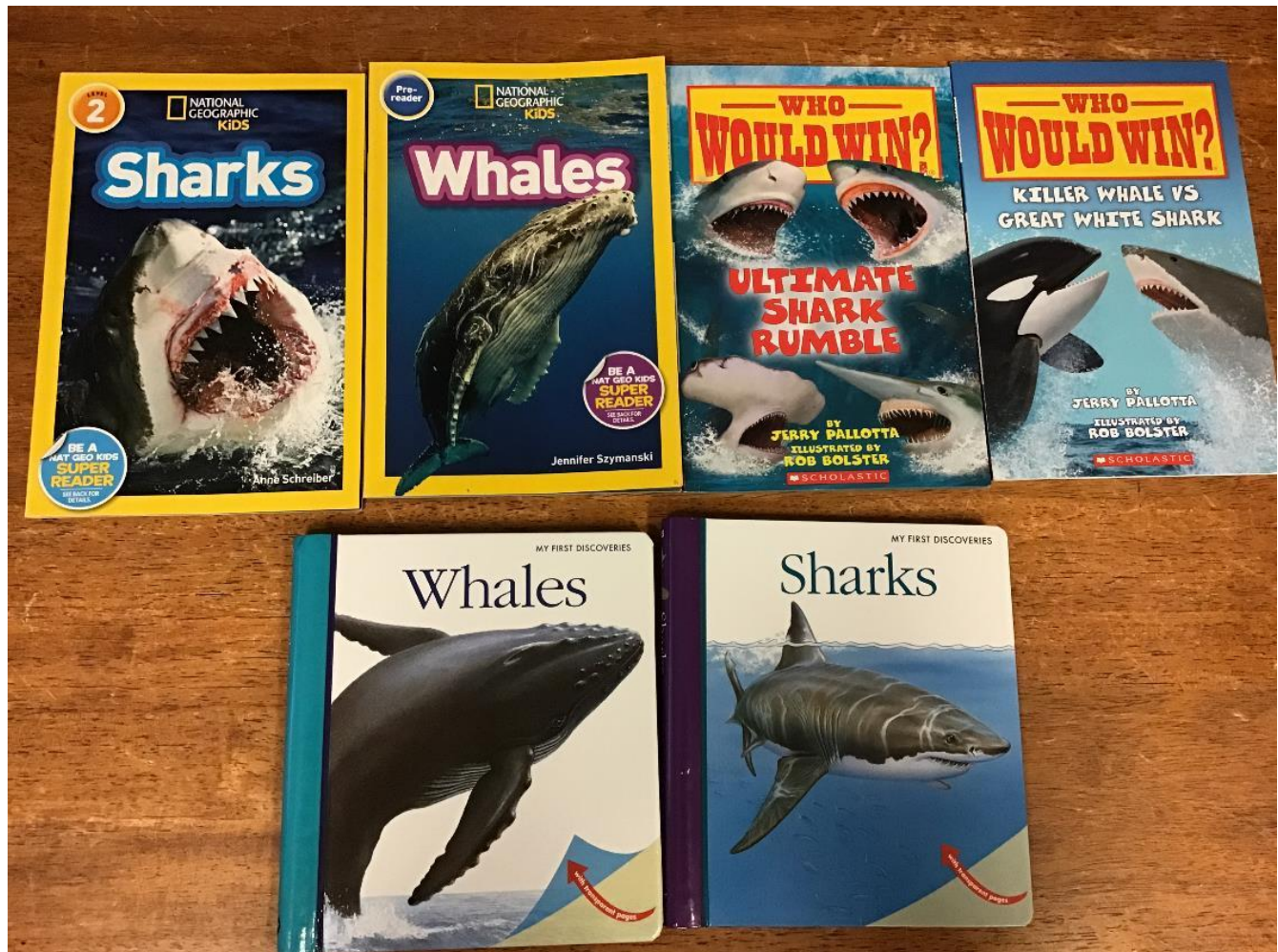
SHARK FOOD TYPES:

- Fish, Seals, Turtles, Squid, Octopus, Sting Rays, Dolphins, Mollusk, Sea Urchins, Shrimp, Crab, Lobster, Krill, Jellyfish, Baitfish, Fish Eggs,

WHALE FOOD TYPES:

- Small fish, Seals, Turtles, Squid, Sea Lions, Large whales and killer whales will attack smaller sharks, Smaller whales like the baleen whale will eat zooplankton and phytoplankton, algae and small fish

On May 16, Nidya brought in new books about sharks and whales to read with the children. We learned that most of the whales do not have teeth like sharks or us, but a filter-feeding system called baleen, which works as a "net" to catch their food.



The next day, in groups of three, children sat at a table with Nidya for a hands-on experiment to understand this system a little better. We started by reviewing the whale's characteristics and how they differentiate from sharks. Especially the ones that do not have teeth, which eat something called plankton, a mix of small sea creatures such as krill and shrimps. To make it simple, Nidya explained that the plankton is as a salad made of different veggies and the veggies are the different small sea creatures. At the table, each child had a bucket with water and a comb. Nidya added small pieces of colour paper, this was representing the plankton; and then, each child submerged in the water their comb, which represented the baleen in the whale's mouth. Children moved the comb through the top of the water catching the "plankton" as whales do when they eat. After catching all the plankton from their buckets, children picked a whale to role-play. They started by using the pieces of paper to feed them "Yamy, yamy plankton," Sathwik would say as he put pieces on his whale. Daniel, Ari, and Alex made their whales jump and splash the water while most of the girls decided to use the comb to brush and clean their whales. Each group finalized the activity by watching a 1-minute video where they could see a real blue whale catching plankton while swimming.



On Thursday May 26, the children learned how sharks and whales communicate. First Melissa asked the children what communicating meant. None of the children knew the answer to this. She told them that it meant it is a way on how we talk to each other. She then told them they were going to learn about how whales and sharks communicate.

We began the lesson by watching a short video about whales. This video explained how whales sing to communicate with one another. After watching the video, the children were able to recall a lot of information. They told that orca whales, sing as well as humpback whales. Whales do not sing in the same way that human sing, using vocal cords, but instead use air sacs in their bodies to make sounds. Ari said how they talk with their eyes and Daniella said they use their mouths. When the video mentioned how a humpback whale was once heard and recorded singing for 22hrs, Alex commented that that was so long, it went into the nighttime."

When we talked about why whales sing, it took a minute for children to recall. Daniella said they sing to play with each other. With a little help from Nidya, after remembering the hearts in the water on the video, Maia told us that whales communicate for love, to express and to find love. We then watched a video of humpback whales singing and swimming in the water as well as one of orca whales. The children sat and listened intently. We took some deep breaths and sat very still trying to pay very close attention to the sounds they made. Mary and Melissa thought they sounded sad and Daniella and Nidya though they sounded happy. In this, we learned that they also sing to express emotions.

When we talked about sharks, Melissa asked the children why she did not have a video or sounds of the sharks. They thought for a few minutes. Melissa then asked, "How do people who can't talk or hear communicate?" Still the children had no answer. Then Melissa used sign language to sign more with her hands and asked the children what she was doing. One of the children said, "You are saying more." "That's right," Melissa said, "and how did I tell you that?" "With your hands." Melissa then explained that sharks used their fins and bodies to talk to each other; they open their mouths, nod their heads and arc their bodies.

This activity gave the children a little more information on the differences between the two. This is something they can express when using our toys sharks and whales in play.

On May 27, Nidya and the children recalled about reading books about whales and learning how they catch their prey. Children asked if we could read about sharks. Preschoolers learned that different sharks have different teeth; it depends on what they eat. Some sharks have long spiky teeth for catching, some have flat teeth for grinding and some have serrated teeth for ripping. We also learned that sharks have many rows of teeth and are always losing them. They lose up to or more than 10,000 teeth in their life, and when they lose a tooth a new one moves forward to take its place. After reading the books, Nidya gave the children paper sheets that depicted shark's mouths. Children discussed and concluded that the sharks had long spiky teeth probably to catch other fish. Then Nidya explained that today they were going to help the sharks to clean their teeth as they were covered with different colours. For this, children had to roll a dice to know which colour they had to wipe off. Children used their visual skills to discern the similar colours such as red and pink or yellow and orange in order to clean off the correct one. They also used their math skills as they compared how many teeth of a specific colour each had. They discovered that sometimes one could have only one while their peers could have two or three of that colour. Bentley and Daniel went a step further as they used their memory skills and visual skills to recall where and how many of each colour they had. This experience also fostered children's fine motor and visual coordination skills as they manipulated the cotton swabs to work only on the specific teeth avoiding erasing the colour on the ones to the side.



On June 2, Nidya's activity combined two of the children's current interests, puzzles and sharks/whales to foster their cognitive, visual, memory and problem-solving skills. Nidya glued real pictures of different sharks and whales on Popsicle sticks and then cut them to create a puzzle. As soon as she sat at a table, a group of children came to look. It seems that the blue of the water gave away what the pictures were as Alex said, "they are sharks." Nidya did not have to explain much of what to do, as the preschoolers' instinct was to start putting the sticks together. What she did point out was that each stick had a colour dot and all of them needed to be at the top or bottom to have the pieces in the correct position. Most of the children were able to identify the animal's head or mouth right away and this was the starting point to solve the puzzle. After this, they needed some guidance about the details like finding or completing a fin, a flipper, the gills, etc.

Daniel worked on his own and did not want any help from Nidya; a few minutes later, he was able to put his shark together "it is a hammerhead shark!" He exclaimed when he finished.

Ari noticed a familiar shape on one of the puzzle sets, "that is an Orca," he stated and asked if he could work on that one.

Mila needed some guidance with her first puzzle, but after she was done, she gained confidence and asked to do it again. She did not need much help the second time. As children finished with one, they would wait for a peer to complete theirs to trade and do another. If a child was not able to identify the shark or whale they were working on, they would ask the peer who had already solved it before.



From June 6 to June 17, children worked on a sea diorama; this became our 3D construction. The first phase was creating the ocean. In small groups, children sat at the art table and discussed the whales and shark habitats. Some children mentioned that they live in water, but through some questions we concluded that it was not any type of water as they are not in the toilet, house pools or rivers, but in the ocean. Then using books and pictures on the iPad, children analyzed a little bit more about the characteristics of the water in the oceans, specifically its colour. Through conversations children learned that the sun plays a big part on how the water looks and its absence makes things look darker. To understand this a little deeper Nidya placed a cardboard on children's heads and asked if they could see. "It's too dark," Logan expressed. Nidya explained that if the light could not go through something or it was too deep to reach, things could look dark. In the ocean's case, the areas where the sun could reach close to the surface it looked like a lighter blue and this colour would become darker and darker as it gets deeper.

After understanding the colour shades in the ocean, children worked on making different shades of blue. Nidya had three different containers with blue paint and asked children to make hypotheses of what could happen when adding white or black paint to them. Then, they worked together adding and mixing the colours to create the new ones. After we made three different shades of blue, we discussed where the surface and the floor of the oceans should go on the cardboard box.



On Wednesday, we had already glued sand to the floor and everything was dry for the animals. In small groups, children came to work with Nidya at a table, where they discussed what animals could be found in the ocean. Children were very clear about land animals and sea animals; however, the turtle caused some doubts, as they were not quite sure. Using the iPad, they looked up turtles and found some differences between the ones that live in the sea compared to the ones on land. Later on, using pipe cleaners, the children shaped reef corals and added them to the bottom.



On June 20, the children fostered their fine motor skills as they worked on vowel recognition. This activity was a recap of what sharks eat and using a pair of tongs the children had to pick up fish before feeding their shark.

The children used their fine motor skills to roll a dice with only the five vowels on it, discover which vowel letter it was, find the matching fish with that letter on it, use the tongs to pick them up and place the fish in the sharks' mouth. When all the fish were gone off the table, the children strengthened their counting skills by seeing how many fish their shark actually ate.



3: Concluding the Project

On June 16, the educators booked a virtual tour to the Ripley's Aquarium in Toronto Ontario as a field study to learn more about fish, sea animals, mammals and sharks in the ocean. Our field trip was a virtual in class done with an employee from aquarium in Toronto, Daniella. The activities provided the opportunity for growth in the following areas, cognitive, numeracy, visual, and language. Daniella not only brought forward new information, but also had the children think and recall what they have learned with their educators.

Here are a few areas of recalling:

How to keep our ocean clean; what do they need to survive; what is a habitat; what they eat.

The children had the chance to participate interactively to the many learning activities that Daniella, our instructed, provided for us to do. Here, the children fostered their visual skills while searching for hidden fish in the seaweed and coral reef. We learned that these are a natural home/shelter for many smaller fish where they go to be protected from larger predators.

The children fostered their numeracy skills as they counted the number of bubbles that appeared on the screen. This part taught the children about air and oxygen as the bubbles represent the animal breathing in the water. If they breathe in air like humans then they will come to the surface to do that. For example, a turtle, who has lungs like humans, breaths air and will come to the surface for that air; we also discovered that a turtle can stay underwater for seven hours before coming to the surface. If they breathe under water, they have something called gills, and these animals stay and swim underwater. A few of our children were able to recall this information from previous activities.

The children learned a bit about the ways other sea animal protects itself in the ocean like the stingrays who uses their stinger in their tail to fight off their enemy. Alex asked, “Will it sting a shark?” The answer was yes.

Sharks use their teeth, and we discovered they have over 50,000 teeth and 5 rows. If one falls out another takes its place right away.

We learned how to clean and protect the water so the sea animals stay healthy. We can do our part by picking up the garbage on the ground. Here the children found out the wind can move it from land to water. It become dangerous as these life forms do not realize it is garbage and can harm them. Daniella was proud to learn that the preschool children have a re-usable water bottle and shared that this keeps plastic waste down and out of oceans.

The children also had the opportunity to view a few small live videos of the staff preparing the food differently for each animal, one on cleaning the glass and water of the aquarium for healthy life and one feeding an octopus. We learned that some animals eat lettuce and other veggies like broccoli, carrots and kale. We saw how a turtle was eating big pieces of lettuce and in Laila’s words “it is not chewing,” Daniella states they can swallow a whole head of lettuce too all at once.

After the virtual visit, Nidya set up some trays with sharks, whales, coral reefs and rocks. Here, children role-played some of the things they had learned. Daniella said that the rocks were small fish and that the shark was eating them. Ari used the coral reefs to hide his whale from the sharks and Maia placed a rock on a shark and said he was going to take the rock to his house to build; it seems she was referring to the shelter.

As we recapped all of our learning at the end, we discovered that we added a few new words to our existing vocabulary list such as oxygen, see weed, aquarium, camouflage and coral.



After the children participated in the virtual field study tour of the aquarium, it seemed that they were content with this being the final stage to our project. The children had the opportunity to ask more or remaining question they may had had and listened intently for the answers from our tour guide. We noticed right away after the tour finished the children's interest changed and sharks and whales were no longer the highlight. The next day we revisited our webs, talked to the children a little more and agreed as a team this project was complete.

Teacher Reflections

As an Educator, I have enough knowledge over the years to help this project get off to a good start. For me it was how this particular project got started, with children's simple conversations and not just educator's observations. Sitting and listening to the children's conversations about what they knew or thought they knew gave me the opportunity to focus in on their knowledge. A simple question led by Laila led to a simple argument and finally to our project. Right away, I got my pen and paper and said, "Ok, what are we learning? Over the next hour, the children shared with me what they knew and what they wanted to know. The excitement in their voices and the smiles on their face showed me that this was a good topic. This project was not only teacher guided, but also peer guided with our older more knowledgeable children supporting our younger ones.

Mary Klug Rece

Sometimes I think and feel that because my experience I know enough about a topic or subject to talk and teach children about it, but when I start working and doing research for a project it is when I realized that my knowledge was very limited. I enjoyed the shark and whale project very much as it helped me to understand more about these creatures. I was never interested in these animals and now I am happy to know different species and their characteristics. Hearing Alex and Ari sharing about what they knew to their peers and their educators was very pleasant. I have two favourite parts in this project. The first one was to be able to have the virtual visit to the aquarium to learn about other sea animals and the live stream aquariums from over the world that I played during some mornings using the projector. Children would stop their activities, observe for a few minutes and then would go back to their playing. It was like being under water with the sharks!

Nidya Oosterveld G., RECE

I had once as a child had a passion for orca whales. Listening to them talk and sing has always been wondrous to me, but I did not know the depth of the way that they communicated with these sounds. This is why I decided to focus on this for my main part of educating and exploring with the children. I also had no Idea how sharks communicated and was curious. I had a hard time teaching this part the way that I did at first, as it felt more teacher guided. I learned that even though the Information Is coming from me, as long as the interest is coming from the children and they have a desire to learn, that a little teacher guidance is at times warranted.

Melissa Miller, RECE