

The Project Approach to Learning at

RisingOaks
Early Learning

| Saint John Paul II

Project Name: Bug Habitats

Age Group: Sr. Summer Camp (6-12 years)

Project Start Date: July 2021

Project End Date: August 2021



RisingOaks
Early Learning

Growing minds through play

Background

The title of our project is Bug Habitats. The group was curious about bugs we were finding outside and where they made their homes. The ages of the children ranged from six to twelve years old. Each week we had 26 children attending camp. Some children attended camp for the whole summer, throughout the weeks we said goodbye to a few children and welcomed others. We began our project in early July of 2021 and wrapped it up in mid-August 2021. The educators involved in this project were Erin Wilhelm RECE, BA and Sam Loree, RECE and Cileena Shakur, RECE.

Phase 1: Beginning the Project

The concept for this project came to the educators when they observed that the children were very interested in the bugs they were finding out behind the school and on our weekly field trips. Various types of spiders were among the first types of insects found on the playground. The children were most interested in the Daddy Long Legs. The children would look for their webs, to see where it had come from and if it had caught any food. On the first field trip that we went on, the children saw a dragonfly sitting on a leaf and some water striders moving around on top of the water. They watched these insects while on a break from our hike and commented on how it looked like they were floating on top of the water. A conversation about camouflage took place as some of the children noted the dragonfly was hard to see as it blended in with the leaf it was sitting on. Behind the school, the children observed ants and how they moved around. This led to a discussion among a small group about ant farms and how they are created. The group watched as the ants crawled around their anthills. We noted if we disturbed the sand, the ants would need to rebuild their home. The other insect that the educators most often observed the children inspecting was the grasshoppers. The children would often chase the grasshoppers around in the grass or hunt for them in the fields. This gave the educators the idea to help the children research these various types of insects and their habitats that they happen to be curious learning more about. These observations sparked many ideas and concepts, such as camouflage, the importance that insects and their homes have in our environment and the different materials used to build habitats. When first discussing the topic of insect habitats, we asked the children various questions relating to the topic of interest. They were able to share their thoughts and ideas through a group discussion and collaboration.

What Do We Know About Bug Habitats?

- Mateo - some bugs live in the jungle, forest and backyard
- Jillian - there are different types of insects. Arachnids have eight legs and insects have three on each side. They live in hives and nests.
- Preston - Some bugs live in trees
- Mason - June bugs bury themselves into the ground to make a home
- Hadley - live in different types of weather, travel to different places In the winter
- Kaylee - they live in different parts of the world
- Lorelei - some live in the desert

What Do We Want to Know About Bug Habitats?

- Hadley - How do they survive in their habitats?
- Kaylee - Why do bugs only survive in their habitats?
- Jeremiah - Do bugs live in space?
- Jillian - Where do bad insects live?
- Millie - How do insects choose where they live?
- Sofia - How do insects build their homes

Whom Can We Ask?

- Jillian - go to the forest and fields
- Dawson - online
- Hadley - look at different places on our weekly trips
- Sofia - butterfly conservatory (reach out to some who works there)

Phase 2: Developing the Project

The grassy and forest areas behind the school were excellent areas for finding and observing different types of insects. Ants, grasshoppers and caterpillars were among the many insects the children commonly came across.

A group of girls found a potato bug while playing outside with their peers. They brought the bug over to the educator, who inquired what they think the potato bug needs to survive? As well as what materials we could use to help them survive. Emma G said, "I have a small box, we can collect leaves, sticks, sand and grass for it". Millie suggested that they put a stick up against a corner in case the potato bug wanted to come out for a little bit, it could climb up the stick. Lucy said, "Let's put the sand in first then the grass so it has something comfortable to lay on, then leaves for him to eat". When the educator asked them how they knew, what the bug needed to survive Millie said, "Well if we look around, this environment is very similar to what we have in our box, sticks, leaves and grass". Once they built the small habitat for the bug, a few more children wandered over in curiosity to see what they were doing. Mateo asked to see the potato bug, once he saw it he said, "I wonder if that is actually their name or if it is something different, kind of like a nickname?" The group decided further research was needed once they returned inside. Together they discovered the potato bug is also known as the "pill bug".



Figure 1 Millie holding the potato bug she and her peers found



Figure 2 Potato bug habitat created by Millie, Emma and Lucy

Over the course of the project some of the children would draw what they saw when they were out on the playground or on field trips. The drawings below represent what they feel the home of each insect looks like.



In order to answer the majority of our question we needed some outside help. Educator Sam contacted the Butterfly Conservatory, in Cambridge and was able to set up a virtual field study tour of the area as well as an insect "meet and greet". During the meet and greet portion the children were able to ask their pre-thought out questions along with some others they had thought of while going on the tour.

The first two questions the children asked were about Insects surviving in their habitats. We learned that most insects survive based on the living conditions, food and overall environment that they have chosen to live in. The butterflies in the conservatory are tropical butterflies so they need their environment to be humid and moist, which is why they cannot be allowed out into the natural Canadian environment. They also need flowers to feed on, as well as, the juice of rotten fruit. The children were told that along with being nocturnal, moths come out at night in order to avoid predators. The last example given was the glass-winged butterfly. It needs to live deep in a dark forest and that it migrates up and down the mountains, depending on the time of year.

The first question flowed well into the second one, which was, "where do insects choose where to live?" We learned that the female butterfly decides where her babies live simply on where she decided to lay her eggs. The caterpillars do not get to decide where they live. The children also found out that if the insects live in an environment that is cold for part of the year (like Canada) they tend to be smaller, as they do not have the full year to grow. Whereas, tropical bugs can become really big, as they do have the full year to continuously grow.

The children then asked, "How do insects build their homes?" They were told that insects like ant and tarantulas dig holes for their homes, but ants (along with bees) work together as a team to get the jobs done, but spiders work alone. Butterflies do not have an actual home the children were told. They free roam throughout the day and at night; they hang upside down on bushes to rest.

The last two questions had short answers; the first being "are there bugs in space?" To which they found out, that particles have been found in water that seem to be alive. The last question asked was "where do bad insects live?" Our guide suggested that there were no bad insects but there are invasive insects that can be bad for the environment. This means that this insect was meant to live somewhere else (another country) but was introduced to a habitat that could not handle them the example that was given was the Gypsy Moth. It was brought to Canada somehow and it has taken over and is ruining our plant life.

On our weekly field trips we visited many natural areas such as; Huron Park, Valens Lake, Elora Gorge, Rockwood Conservation Area and Riverside Park. These field trips offered wonderful opportunities for observing a variety of different bugs and their habitats. Lots of hands on learning took place as the children and educators examined bugs found on alongside pathways, on fallen logs and in grassy areas. Below are some pictures of bug habitats we found during our weekly trips.



Figure 3 Insect eggs found under the bark of a fallen log at Laurel Creek Conservation Area



Figure 4 Insects using a log to make their home at Huron Park



Figure 5 A slug crawling in the mud at Laurel Creek Conservation Area

Phase 3: Concluding the Project

For our large group project, we wanted to create bug habitats of our own, as a group, we researched pictures and DIY projects on Pinterest and came across Bug Hotels. The images we saw were very interesting and Carter (9 years) did some research at home and brought in some images as well. After deciding that we were going to make the bug hotel, there was a group discussion on what type of bugs that we wanted to attract to the habitat and what we would need for them to come and visit. Most of the group had many ideas for the different types of insects, but there were a few that we needed to look up on google to make sure we were gathering the right materials. Below is the list that they created.

1. Ants - honey, dirt, jar/bottle
2. Spiders - dark place, insects, sticks, rocks - decorate hotel with paper plate spider webs
3. Bees/Wasps - something sweet, flowers, white clover
4. Butterfly - flowers, grass, bright colours
5. Caterpillar - milkweed, leaves, fruit
6. Beetles - water, leaves, rocks, sticks
7. Centipede - dark place, bark, leaves, rocks to make caves, pinecones
8. Praying Mantis - leaves, grass, sticks
9. Earwigs - damp cloth, grass, wood
10. Worms - dirt

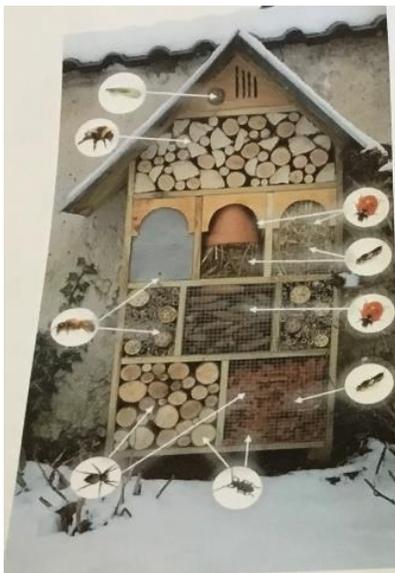


Figure 6 Reference photo of a bug habitat shared by Carter



Figure 7 putting the final additions on the bug hotel

We took a trip to the forest one day to collect leaves, sticks and rocks to use in the building of our habitat. The group was reminded of size and to collect items that would fit into the box that was selected to use as the base of the hotel. Once we collected the items, they were put into a pile to bring back to the room, which we did at the end of our forest visit.

The following week, some of the group volunteered to start putting the hotel together and decorating it with nice bright colours. The next day the group decided it was time to try to get some guests to check into the hotel, so we took it outside in the morning and tried to entice some insects inside. Some of the children caught a small moth/butterfly and tried to place it into one of the rooms, although it was not ready for a vacation. It kept flying away, but eventually settled on the back of the box. Ants were also caught and checked into their rooms as well. The guests did not stay too long, however, we observed the children using their problem-solving skills to figure out how to entice more insects to stay at the hotel. Some brought over different types of flowers, some brought fresh grass and some brought sticks. They used the knowledge that they gained when we researched what types of things different insects use to build their homes.



Figure 8 Natalie welcoming a moth to the Bug Hotel



Figure 9 Klara and Benjamin putting the final touches on the Bug Hotel

Hotel



Figure 10 Benjamin carefully moving the Bug Hotel with a moth sitting on the back



Figure 11 the completed Bug Hotel

Teacher Reflections

Erin: When starting this project, I was a little worried that the children might lose interest quickly, due to their age and already having a base knowledge of the more common bugs. However, when the interest was narrowed down to the habitats of different insects, my hope for a successful project was restored. The children became interested in researching the different habitats and it was fun to watch them explore the different environments on our weekly field trips. They were exposed to many different habitats that included water, plants and trees. These trips allowed the children to bring this

new knowledge back to the classroom and use it when they built their Bug Hotel. Being able to take a virtual tour of the Butterfly Conservatory was very helpful and the children were able to ask all of the questions that they had initially asked and were curious about. They were able to show respect to the guest speaker and were fully engaged in the tour and "meet and greet" of the insects. The final Bug Hotel was amazing and it was great to watch them work together as a team and try to include as many different types of bugs as possible.

Sam: This project was a lot of fun to do with our summer camp this year. It really benefitted, as we were able to go on field trips and search for different types of bugs and their habitats. The interest in bug habitats began in the first couple of weeks of summer camp. The children were outside and found a potato bug, from there the conversation sparked with questions about where they live, what they eat, and so much more. Throughout the project, we saw a lot of learning happening with the children and even ourselves as the educators. The children wanted to research different types of bugs not because it was for the project but because they were genuinely interested in learning more about them. Many of the children also helped create our bug hotel. As a group, we researched and talked about where the different types of bugs live and what they need to survive. It was wonderful to see the children come together and work as a team to complete it. To wrap up our project we were able to have a virtual meeting with the Butterfly Conservatory. There we met some bugs and had a tour of the facility. The children were very engaged throughout the virtual meet and had many questions to ask the Butterfly Conservatory educator. We hope the children enjoyed doing this project as much as we did!

Cileena: At the beginning of this project, I did not imagine how far this project would go or the knowledge we would gain from our experiences. Before beginning this project, we saw that many of our children were very interested in the bugs that they were finding out in the playground and when on trips. However, when the project was introduced there was some hesitancy from our children. I think that as we got into the project and began to ask more questions the children really started to get curious. I loved how the children were always looking for new bugs and were fearless to pick them up to show to their other camp friends. The children loved finding the daddy long legs out on the playground, and while on trips we found many underground bugs like millipedes and potato bugs. When we researched where the bugs lived and how to create a habitat for the bugs, many of the children took it upon themselves to share the information they had learned or already had previous knowledge in. Some children even took it upon themselves to research at home and brought their findings to share with the campers. To bring together our project we created and tested our bug hotel. The children were excited to see how many bugs we could gather into our hotel. As we were outside, they continued to find new materials to add to the hotel. To finish our project, we had a virtual tour with the Butterfly Conservatory. This was a great way to finish off the project. We got to virtually tour the conservatory and got to meet some of the bugs that lived at the conservatory. I loved this because we got to learn more about these bugs, and for a person like me that hate bugs it was nice to learn about them from a distance.