



# Worm Project

Owl – Lincoln Road: Preschool 2

## Background

The preschool worm project started in March 2016 with a question; is the worm going in the hole or is the worm coming out? We completed this project at the end of July 2016. The children in the preschool room range from 2.5-4 years of age. The staff learning along with the children are Mary Klug RECE, Kathy Dunk RECE, and Leanne Wolfe RECE

## Phase 1: Beginning the Project

The worm project began on a clear, cool but sunny day. The weather was great, our snow had melted and the staff were ready to bring out the sand toys, bikes and balls for the children to explore. Mary noticed John in our vegetable garden, so she kindly reminded him to come out of the garden, as it was our preschool area to plant fruits and vegetables. John looked at Mary and replied, “but I am busy.” As Mary approached the garden to encourage John to come out, she noticed how he was concentrating on something very closely. With his knees bent in a crouching position and his head very close to the soil, Mary decided to bend down beside John and noticed a worm. Mary asked John if the worm was coming out of the hole or was he entering the hole. John replied, “I don’t know,” so we continued to observe to find the answer. As we waited patiently, a crowd of peers began to gather around us with many questions about what John and I were doing. Mary suggested that we should look up some of the answers on our iPad once we go inside. The teachers thought worms would be a great project, for not only the children but the staff too, since we were entering spring.

The next step the teachers took was to create a planning web with all the children’s knowledge on worms and what they wanted to know.

Things we know about worms:	Questions we have about worms:	Where can we find answers?
Worms wiggle	Can worms swim? (Ava)	Computer or iPad (Ian)
Worms like dirt	Why do birds and animals eat worms? (Claire)	Books from the library (Elysse)
Worms are in puddles after rain	Why are they slimy? (Carter)	A farmer (Jack)
People step on worms	What do worms eat? (Julian)	Our parents (Jack)
Worms are brown	Do they have a mouth? (Jack)	Articles from magazines or journals (Teachers)
Worms look like snakes but are small	Why do you see worms after rain (Emilie)	
Worms don’t bite	Why do worms live in soil/dirt? (Ian)	
Worms are small and slimy	Where do worms go in the winter? (John)	

The children created their own web through expressing activities and games that they would like to do. The teachers brainstormed and created a planning web about worms and how the children's questions could be answered in a variety of ways.

## Phase 2: Developing the Project

The first thing the children wanted to do was bring the worm from our garden inside and keep him as a class pet. We all agreed this would be a wonderful thing to do, but Mary now had a question for the children to think about; "Where would he live?" The children talked about many different places he could stay but realizing that without some type of containers to put him in he would probably crawl away overnight. Elysse suggested a container with a lid and Jack added, "with holes so he could breath." Therefore, the children searched our room to find something to put our pet worm in. Many different shapes and sizes of buckets were found, but nothing that would house our worm that would keep him safe. Mary suggested we should get out the iPad and look up worm homes.

Finding a comfortable corner John, Claire, Elysse, Ian, Ava, and Cali joined Mary so we could research the types of homes for worms and the pros and cons of each one. We found many temporary homes that would work for a day or two but wanting to keep them safe and healthy we needed a better way of doing so. We found three homes that would work; now it was choosing the best for our class and agreeing on it. The first home being a clear bucket with a lid and tiny holes in the top for it to breathe. The second one Laila liked because it was made out of two pieces of plexi glass with wood around the pieces to hold it together with a large wood stand. We could see through it; however, this home was large and not moveable and would need to be stationed outside. Elysse and Ian asked if we could continue to browse a bit more, when we came across a tube like home. Clicking to read more about this home, we discovered it was the closest to a real worm home outside, and it was portable so we could move it. The children all seemed to like this home the best so we took the next steps in writing the instructions and materials down on paper. The children then took a list of materials along with the iPad photo of the home to Denise in the office. Ian and Elysse discussed with Denise the knowledge they had gained researching homes and how we all came to an agreement on which home we would choose. Elysse then asked Denise if she would go to the store and look for the materials needed so we could build our worm home. Denise answered with "YES!"

By the beginning of the next week, Denise had all the materials purchased and brought down to the room. The children were eager and ready to make this home. A small group ventured outside with Mary to gather some sand from our sandbox, and peat moss from the bag. Inside the room, we placed the iPad, notes, and materials on the round table. We had a short discussion about each item and how it worked before placing them in the vase.



We learned that worms must be kept in a moist dark area or they can die. We learned that if worms are in the light too long they become paralyzed and are unable to move for up to an hour. We also learned that their skin can dry out when they are in light and this can cause them to die. We discovered worms only come out of the soil if it rains, so that is why we see them on the ground. Worms breathe through their whole body therefore if their hole fills up with rainwater the worm will drown. Worms go back into the soil once the rain stops and the soil soaks up the remaining water.

Once the worms were comfortable in their new home another question came about.

Can we paint with the worms?

We discussed this question and felt the real worms may not like paint on them, and the paint would hurt them. Therefore, Leanne decided to get out some string and scissors along with a ruler and

some paint. This activity allowed the children to explore worm painting in a similar way without using real worms.



The children cut a variety of strings some being short and others long. Then they measured the strings on a ruler to see how long each piece was. One string was two inches while another was 10 inches. By using different paint colours, this allowed the child to see the impressions on the paper that each different size of string made. The shorter pieces of string were yellow and the longer pieces were orange. Our paintings all look different. Emilie said, "I made small worms then bigger worms beside each other". John said, "Some worms are babies and some are not. That's why they are different sizes". John tried to paint with two different lengths of string. Leanne asked John "How are you going to paint with both of the strings?" John said, "I'll show you!". The first one was six inches and he found that to be a challenge to get all the paint on it. The second one was about two inches and he said, "This is better to paint with, it's like a baby worm". John explored many ways to paint with both the strings at the same time. "Look! I'm dragging it across the paper; it looks like a mom and a baby". John said, "This does look like real worms". Leanne asked, "Do you think the picture would look better using real worms?" John said, "We can't use real worms because we don't want to hurt them". Leanne agreed with John's answer.

Toby chose to make his worm the longest at ten inches and tried painting with it. "This is hard to paint with". Toby said, "I want all my worms to be yellow and orange, I like those colours!" He then tried folding the string in half to make it smaller to see if it would work better. Leanne asked him if he had seen a worm that big and he replied with "No". He then said, "I wanted to see what a big worm would look like close up". Toby explored different techniques of how to paint with the worm like string. Toby said, "I want more worms in the garden, so I'll paint more".



A small group of children was interested in knowing the length and width of a worm. Leanne brought a tape measure outside. Cali was very curious “How wide is a worm?” Leanne, Cali, John, and Ian decide to find some worms outside to measure. We found two worms in the garden. We wanted to know the width using the measuring tape. We measured worm “A” to be 6mm wide and 10cm long. Worm “B” was 10mm wide and 12cm long. Ian said worm “B” was bigger than worm “A”. Leanne asked the children “Why are they different sizes?” Cali answered, “Because they grow differently”. “One is older and grew more,” said John. “One might be a girl and one might be a boy,” replied Ian. When the activity was finished Leanne asked the small group “What should we do with the worms?” John said “Put them back in the garden so little worm “A” can grow as big as worm “B””. Leanne thought that was a great idea. John and Cali carefully placed the worms back into the garden outside. We watched as they went back into the soil.



The next day Kathy noticed the children playing with string. Some wrapping it around chairs, others pulling it behind them. Kathy then asked the children “does anyone want to see how long the biggest worm is?” Within seconds, a group of children joined her. Using the iPad Kathy and the children started to research worm length in general, and where they live. We discovered nine types of worms.

1. Bootlace Worm: Sandy and muddy shores, tide pools in the coast of Britain. This worm is 190 feet long.
2. African Giant: lives in South Africa and is 22 feet long.
3. Common Earth Worm: found all over the world, and can vary in size up to 7 inches.
4. Bristle Worm: Salt water Reefs and is 33 feet long.
5. Hydrothermal Vent Worm: ocean floors
6. Tapeworm: live in humans and animals.
7. Leeches: live in fresh water.
8. Giant Gippsland: Australian farms
9. Arrow Worms: marine water, deep sea and Polar Regions.

This information gave Kathy and the children an idea. Let’s use the large measuring tape along with our string and measure out the length of some of these worms. Measuring out 7, 22, 33, feet was not too hard, and Elias said it was fun. Some children held the tape measure and others stood on the string so it did not move. Kathy then decided to place these strings on our wall around the room. Having a visual to look at really opened our eyes to how big they can get. Ian said to Kathy that he wanted to do the Bootlace Worm, which is 190 feet long. In agreement, the children started to measure out 10 feet at a time.

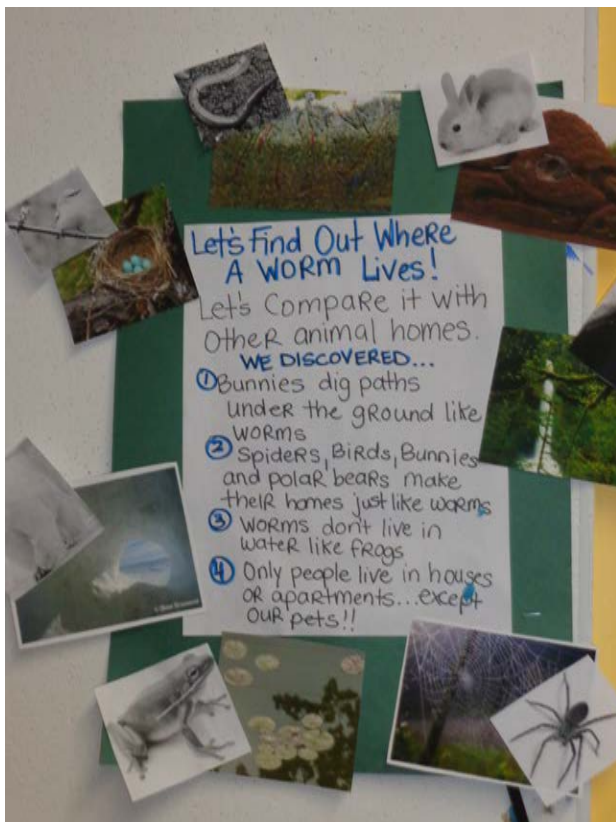


## WORMS

Worm, worm slippery slide (sliding on their belly)  
I smell a bird and I better hide (curl up in a ball)  
Down, down under the ground (slide again as if you are getting away)  
Wormy squirmy round and round (twirl around)

Another activity that was sparked through a question Emilie asked was about homework. Emilie wanted to know when she would do homework like her sister, from the information she has learned to date. The staff created a simple Homework Sheet with six questions about worms. The answers were written on the page with a diagram to go with each answer. The children had to circle the answer they believed were right and return the sheet the next day. We sat at the group and discussed each question carefully, filling in any missed pieces if someone was confused. The tricky question was “Do inchworms belong to the worm Family?” Well as much as we want to say yes, the answer is actually no!

The inchworm actually belongs to the caterpillar family. It does not slither on the ground it arches its back and inches along, that is how it got its name. The inchworm spins a cocoon and eventually turns into a moth. The only difference between the inchworm and caterpillar is the inchworm spins a cocoon and the caterpillar spins a crystalist. An earthworm does neither.

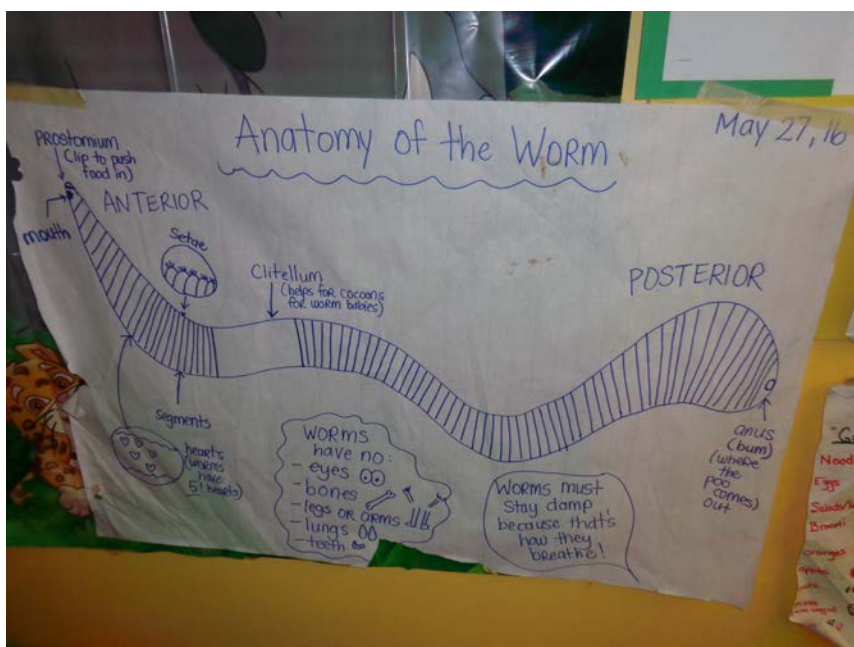
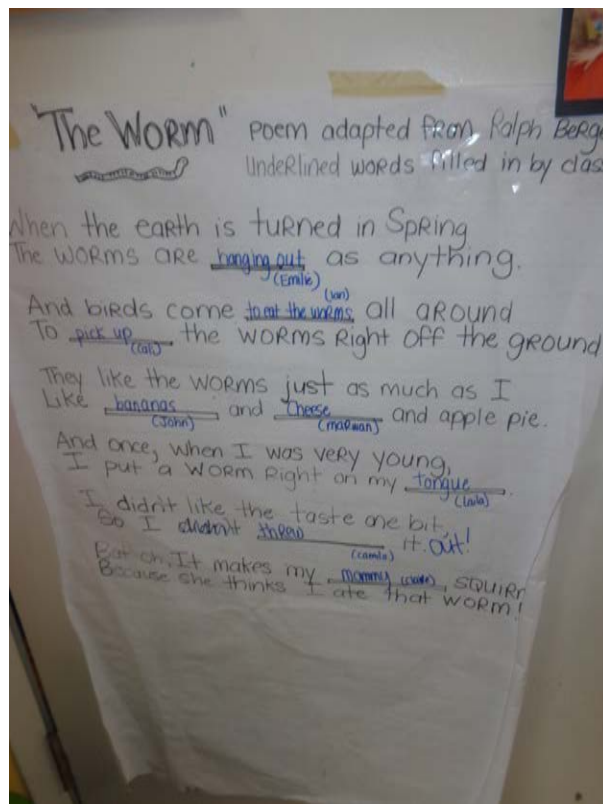


The children continued their interest in where a worm lives. Kathy brought in a matching game for the children to play. The game allowed the children to expand on what they knew about where animals live and use their reasoning, communication and classifying skills to match the animal to their home. The children were intrigued to learn that rabbits, like worms, dig tunnels under the ground. Chloe stated that it was, “a good thing the worms dig tunnels too, so the rabbits don’t eat all the worms!” This allowed the children to compare and observe the world around them, recognizing differences and similarities between animals. It also expanded to the question, “how do worms dig the holes if they have no arms?”- Braxton and “why do they make long holes?”- Cameron

We watched a video on the iPad of real worms digging their holes and saw that they pushed the dirt away by eating it! It took lots of time because the worms did not move fast.



The class was interested in singing songs, especially loves songs where you can fill in the blanks with a funny word or a rhyme. Kathy found a poem called, "The Worm" by Ralph Bergengren. She posted the original poem and thought it would be a fun way for the children to build on their phonological awareness by using rhyming words, creating a flow in the poem and by filling in answers that help the poem make sense when read aloud. The children took turns and listened to their peers' ideas. This activity built on their love for literacy and expanded their language skills.



Jack's question from the initial web was, "do [worms] have a mouth?" Using the iPad, we looked up the anatomy of the worm and used the magnifying glasses to get a closer look at the worms. The children used descriptive language to describe the worms they looked at.

- "They're slimy!" -Emilie
- "I'm bigger than the worm." -Toby
- "He has no arms or legs." -Elias
- "He's so bumpy." -John
- "He looks like a gummy worm!" - Cali
- "He isn't very fast." -Chloe
- "He wiggles around." -Claire

Kathy took out a large paper to draw and identify the body parts of the worm. She labeled the body parts first, explained what worms did have and they posed the questions, "what do people have that worms don't? How are people and worms different?" The children problem solved to find the answers.



They studied the worm and themselves. “Arms!” “Eyes!” “Legs!” Cameron, Chloe and Laila shouted excitedly. Kathy then expanded on what they knew by explaining they also do not have any bones (everyone felt their arms) which is why worms can bend in every direction. They also do not have any lungs (everyone took a big breath and felt their chest expand) they breathe through their skin, which is why they must stay damp! In addition, they do not have any teeth. “Worms don’t bite!” Elysse said relieved. We learned that worms have five hearts and that they poop just like we do! We also were surprised to learn that they do have hair! Many tiny hairs all over their body, called setae, which allows them to grip on and push their bodies forward.



The children were discussing that birds eat worms. Carter said, “that’s so sad.” Kathy asked the group what else birds eat. “Birdseed!” Braxton responded. We decided to look on Pinterest how to make a bird feeder. We found out you could make a bird feeder out of recycled milk cartons. We asked Dave to save us three and washed them out with warm, soapy water. Next, we measured, used a ruler to make lines and cut out a rectangle on each side of the milk container. The children painted them then we filled the bird feeders with seeds and strung them up in the tree. It was exciting seeing the birds fly to the feeders. “We saved the worms!” Julian exclaimed.

### Huron Field Trip

In August, we went to the Huron Natural Park. The children in our class were excited to look for worms. As we hiked on the trail, the children looked at the edge near the mud and grass for worms. The children in the other preschool class were excited to look for worms as well. The children in our class were eager to teach them how to look for worms, where the worms may be, and how to pick them up. The children would periodically stop and look in certain areas hoping to find a worm or two. One of the children in the other class asked, “Is this a worm?” “No,” Benjamin responded, “worms are

long and wiggly like a straw!” The children began to compare the similarities and differences between worms and the other bugs they saw. The hunt continued as we sang, “going on a worm hunt.” It was exciting to see what the children knew about worms and what information they retained as they taught the other class about worms.

## Phase 3: Concluding the Project

As the spring ended and summer started we began to notice a shift away from the children discussing about worms and being interested in looking for worms. The children were excited for vacations, water play and building structures. All of their questions were answered and we decided our worm project was ending.

For our last worm activity, we decided to make “worms in dirt” for a yummy snack! The teachers decided to make it a surprise for the children, only saying we were going to have a yummy worm treat with lunch. Dave made us chocolate pudding on the day pudding was on the menu and we brought cookie crumbs and gummy worms. The children’s faces beamed with excitement when they saw the yummy gummies over top of the “mud” and “dirt.”

Some of the children slurped the worms, while others took big bites off the heads.



The children watched them wiggle and jiggle and some buried them in the “mud.” What a fun and delicious way to end our project!

## Teacher Reflections

Leanne's reflections: The children had an opportunity to learn and grow their knowledge about worms. The children were able to learn part of a worm such as segments. Segments are the lines on a worm. They learned where to find them such as puddles when it rains, and in gardens. I learned that when it rains worms surface to the earth. If they stay underground, the water might soak in and they might drown. They also learned what they eat food such as lettuce. The children enjoyed making a home for the worms so they could observe them inside the classroom. A few children observed the worms bringing a piece of lettuce down into the dirt of the worm home to eat.

They observed that the worms come out when it rains since they like cool, moist areas to crawl around in. The children grew their social skills but sharing ideas and observations with peers and teachers in a small group discussion. They children and the staff seemed to enjoy participating in this project and gained knowledge about the different types of worms we can find around the world.

Mary Reflections: I had the chance to learn along with the children, as I originally did not care for worms. It was amazing to see the children take part in many activities that would allow them to gain new information that they could retain and share with their families. We studied home and discussed what would be the best home for them to live in as well as one we could observe their daily routine. Getting our hands dirty was the best part of this activity. Researching types of foods that worms could eat was amazing. We learned that they will munch on almost anything except for meats and oils. So part of this activity was to bring in scraps from home to care for our worms. It was amazing to watch these worms burrow through the dirt making many tunnels to get to the scraps. More amazing was watching them pull the scraps back down their tunnel to their favorite resting spot. The children learned many new things about worms, but observing them in their home was the most exciting. Every day the home would go on the table and we would watch them for a couple of minutes before we covered them back up. For me I learned respect for the many types of worms that I once did not care for. Learning how important their role in our gardens meant a lot to me. Learning that they will die in light as their skin dries out has me putting that worm from the ground back into the dirt so it has a chance for survival. This was a true hands on learning project for me.

Kathy's reflection:

When we started the project I did not think or know more about worms than, "they come out in the rain and are kind of gross." It was exciting for me to see how the children built on each other's questions and the more we learned about worms the more they inquired. I found myself asking, "why?" along with the children and excited to find out the answers. I learned how important worms are, not only to the farming community but to our backyard as well. I enjoyed being able to incorporate various domains into their learning. By actually measuring out the lengths of the various worm species and using string to represent the worms it really brought to life for me just how big (and small) worms can be. For me, this project helped me reevaluate my own thoughts on creatures I find to be "gross" or a "nuisance." I still do not love holding worms or picking them up, but I appreciate what they do for the environment and am fascinated at how a simple creature can be so complex.