

Ecologies of Making: Reimagining Place, Construction, and More-Than-Human Entanglements

Lavina Tam and Leoma (Thy) Vo

Capilano University, Canada

leomavo@my.capilanou.ca, lavinatam@my.capilanou.ca

This is a co-composed inquiry with the children and educators of Morningside, a centre within SFU Childcare Society located at the top of Burnaby Mountain. Together, we explore the complex intersectionalities of human and more-than-human relations as construction occurs throughout the campus and forest as a result of the children's concern for the lives within the forest. Using pedagogical documentation and narrations as a research method and working with a critical place-based lens, we began exploring these intersections as children encounter construction, the forest, and the lives of others within these spaces. With the practice of slowing down to build our relationship to place, and constantly re-working our theories through discussions and drawing with the children, we begin to see place as more than just a fixed location for human use, but as a place in constant transformation with and for the life of others.



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Land Acknowledgment

We gratefully acknowledge that the lands we were fortunate enough to learn and think with are the unceded Traditional Coast Salish Lands including the Tsleil-Waututh (sə́lilwə́taʔt), Kwikwetlem (kʷikwə́ləm), Squamish (Sḵwáxwú7mesh Úxwumixw) and Musqueam (xʷməθkʷəyəm) Nations.

We would also like to thank the Simon Fraser University Childcare Society (SFUCCS) and everyone at Morningside for welcoming us and supporting us in our inquiry and project.

Background



Located at the top of Burnaby Mountain, situated on the lands of the unceded Traditional Coast Salish Lands including the Tsleil-Waututh (səfilwətaʔ), Kwikwetlem (kwikwəʔəm), Squamish (Sḵwxwú7mesh Úxwumixw) and Musqueam (xʷməθkʷəyəm) Nations is Simon Fraser University (SFU) and Morningside, one of the centres within the Simon Fraser University Child Care Society (SFUCCS). We were connected to Morningside through our relationship with the pedagogist of SFUCCS, Bo Sun Kim, and Thy's previous practicum and on-call work with the SFUCCS. Warmly welcomed by the educators of Morningside, we quickly learn that the children have formed a relationship with the forest. As an ongoing ritual, the children of Morningside take walks nearly every week to the forest and the children were recognizing various boulders, mushrooms, stumps, and bugs as they became their landmarks and walking companions throughout the weeks and months.



As an ever-changing space, the university has been undergoing various construction projects in the past several months, many of which are close to the childcare centre and can be seen as they make their way to and from their centres every day. One day, as the children were anticipating their mission to find the snail they saw the week before during their forest walk, it became a big shock to the children when they realized that they could no longer enter the forest they grew to know as it was now fenced off and in the midst of getting excavated.



A big blue fence blocked off the forest entrance, and beyond the blockade, trees were being cut down while construction workers dug up massive holes. Blocked paths, big signs, and heavy machinery invited them to think about the insects and mushrooms that live in the forest and as a collective, the children were immediately worried about the insects that would be harmed, especially with the snail at the forefront of their minds, they were concerned about the animals that would no longer have their home. The children began thinking of the world in the perspective of insects, realizing that even the bikes meandering on the paths would be a danger to the lives of the forest and the roads would be quite a hurdle for the insects to traverse. We decided to focus on this worry that the children had, by embarking on an inquiry as a collective to materialize ways that the insects could find safety amidst the looming, destructive machinery.

Beginning our inquiry, we started taking walks with the children to build our own relationships with the forest alongside the children. As a result of the construction closing off their usual and familiar forest route, we began taking a different path towards what the children called the 'new forest'. Equipped with their curiosity and magnifying glasses, the children began exploring the new forest looking for new discoveries. Chatting with the children along our walk together, we found a collective consensus that the children thought that Morningside would be the safest place for the bugs of the forest that no longer had a home. Thinking with these ideas, we had several questions that we were hoping to explore as we worked with numerous theories the children had such as:

How might bugs stay safe from construction? Why might the children believe that Morningside is the safest for bugs? How might bugs live underground? What do the children think the underground might look like?





Throughout the weeks we co-compose our idea of the underground, materializing it through drawings, diagrams, and pipe constructions. Through each conversation of shared ideas and addition of what we believe to be underground, we construct more detailed mappings along with the stories and theories that align with our drawings. As a result of the construction and the children's concern for the lives that lived within it, we delved into thinking what is beyond the surface and the relationships that are interconnected and are always in relation to one another.

Conceptual Frameworks

In a time where standardized and static curriculum is normalized, taking up a critical place-based pedagogy approach generates space to question, reflect, and shift our views on education and curriculum. We work with a place-based pedagogy to think critically, and take seriously children's questions, wonderings, and points of concern that children have within their specific context – what can begin to emerge, what is made possible, and what comes into focus? Working with the ideas of Affrica Taylor and Miriam Giugni's (2012) ideas of common worlding, Iris Duhn's (2012) place as assemblage, David Jardine's (2008, 2013) concept of whiling, Thom Van Dooren and Deborah Bird Rose (2016) and Rose's (2013) ideas of anticolonialism through storytelling, and Bronwyn Davis's (2014) diffraction as a concept and practice, these authors help support and orient our work with children as we begin to re-imagine our relationship to place.

These concepts, as they are entangled with each other, invite us to be thoughtful in our interactions with place as it brings awareness to our environment and the relationships that surround us while also building our sense of responsibility and connection to place and more-than-humans that we continually co-exist with. While immersing ourselves in place, we are able to explore children's curiosities and learn with them as a collective, providing space to investigate and experiment with their different theories and ideas together. By slowing down and taking notice of place, we begin to further our understanding of all the relations that are entangled in our environment and how our actions and interactions with our surroundings have an effect on a larger community.

Common Worlding

Common worlding is a concept that explores how humans and non humans co-exist in the world. Affrica Taylor and Miriam Giugni (2012) speak to the ideas of common worlding as a means of building an ethical and caring relationship with the world while decentering the human. We are reimagining place to not just be space, but a space that contains relations between insects, trees, natural forces, human intervention and the learning that can happen when we take care to explore the interactions between entities. As educators, we can cultivate an environment where our interactions with nature are re-imagined as a form of co-education, fostering a deeper sense of interconnectedness and ecological awareness through our engagement with our local spaces.



Place as Assemblage

Iris Duhn's (2012) concept of place as assemblages offers a different way of viewing and being by attuning to relationships between human and nonhuman worlds. This notion of assemblages calls for us to pay closer attention to, to become attuned to, the multiplicity of relationships, more specifically the human-nonhuman relations. This concept is rooted in an understanding of place as an ever-changing network of relationships rather than a static and fixed location. Duhn highlights how thinking of the place as an assemblage is a way to make the "...place visible as a social, material and discursive field..." (p. 103), helping us create a placed-based pedagogy within early childhood curriculum and pedagogy. Having this concept in mind as educators helps us notice and pay close attention to the assemblages that can only emerge from interactions that become expressive, intensify, and transform us in many different ways. As we continue our work with children to learn more about place, our curiosities and desires are shaped by our encounters with place, as Duhn explains how we can transform place and be transformed through them (2012, p. 104). Not only do places as assemblages help us view relations between human-nonhuman encounters in a different light, but the very parts that make assemblages are contingent as they form and plug into each other to form new assemblages within existing ones (Duhn, 2012, p. 104).

The Concept of Whiling

Whiling, introduced by David Jardine (2008), is a practice that invites us to think about other ways in which we can think about time in education and what is worthwhile to pay attention to. Worthwhileness in its essence is a way of encountering place and others, not through a passive lens but to really begin seeing in relation to our own lives by “...lingering over, meditating upon, remembering, and returning to” (Jardine, 2008, p. 1). Jardine (2013) places emphasis on how speeding up can have major consequences on children's relationships and understanding of the world around them, stating the importance and power that the memorability of a place has. With children, through this whiling, we can pay close attention to our environment, attuning to the things that we believe matter whether it be our connection to land, fostering our relationships with other humans or more-than-humans, delving deeply into researching or experiencing the things that capture our attention. With each encounter transforming us differently as our memory of the place, other, and material is cultivated and worked through the encounter. We do not memorize events as separate or fragments; rather, each ‘topic’ becomes something new, something we could not have cultivated without our prior experiences (Jardine, 2008).



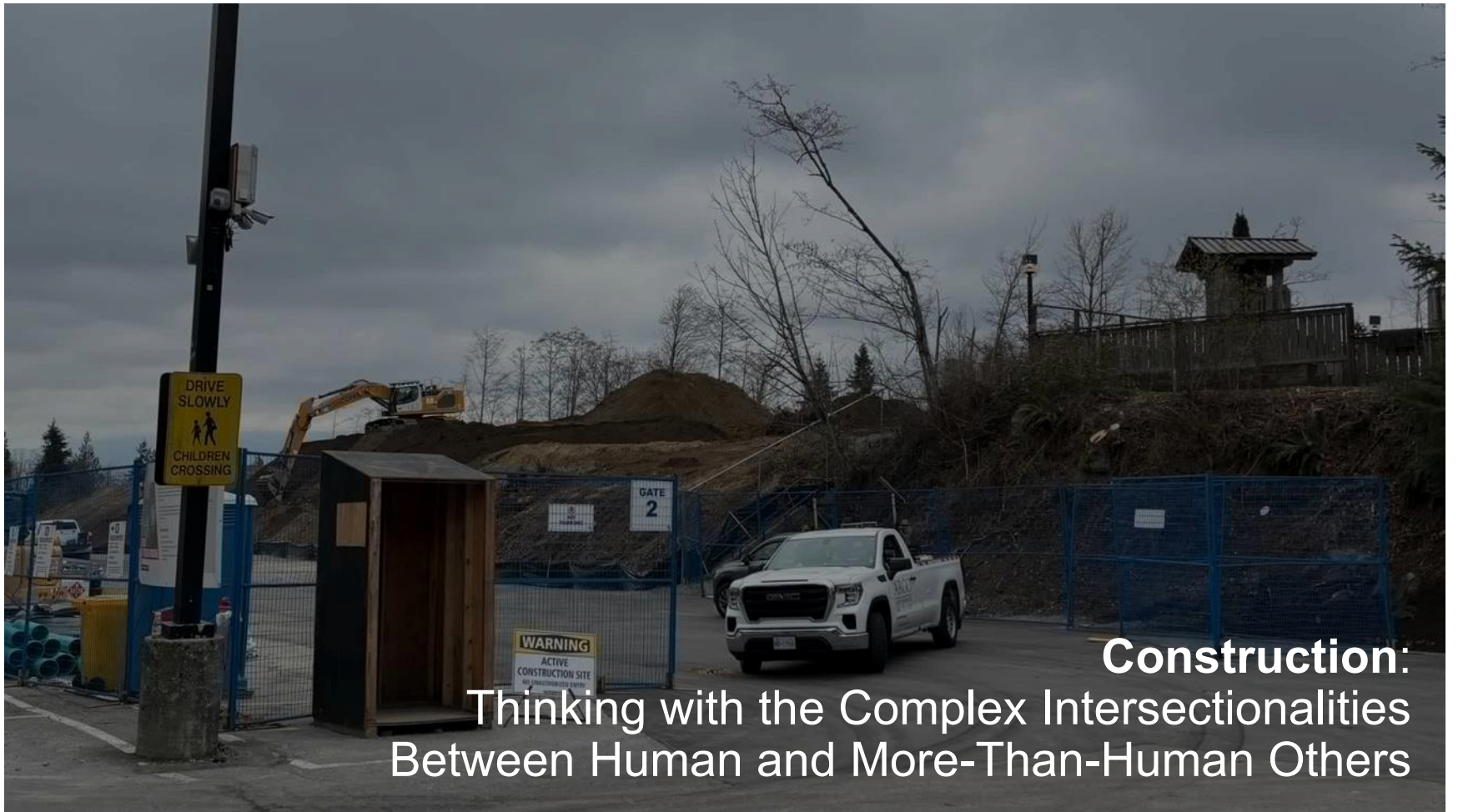
Anticolonialism through Storying

Entangled with whiling, anticolonialism through storying is a concept that happens as we interact and while with our environment. Thom Van Dooren and Deborah Bird Rose (2016) and Rose (2013) write about storying as a relational process that can connect us to our environment. Through the careful time we spend with our environment we create connections with our place, and we begin noticing changes as time goes on. In this time spent, we also begin to create stories as a culmination of our observations and the ideas shared between the collective slowly and gradually creating a deeper connection between self and place, leading to a sense of belonging and responsibility to the space we live alongside. This is also an opportunity to explore the indigenous stories that are connected to place, as they traditionally shared stories through verbal means, and are still very connected to the indigenous land of Morningside. Exploring the reasons for the construction in the forest, the children begin to weave a connection and story of what the insects will do to stay safe now that their home is noisy and dangerous with the construction. They discuss and share ideas of what the insects might do, including the belief that Morningside would be the safest place for them, and they would definitely create or follow paths that would lead to their centre. They materialize these ideas through drawing routes that are above ground following the markings on the sidewalk and create tunnels and theories of how the insects will avoid the construction and dig their way to the Morningside yard.

Diffraction as a Concept and Practice

Through this listening and being a participant of their inquiry, with the practice of listening as diffraction, we are able to return their questions to them from different perspectives, providing a sounding board that entertains a different way of thinking or reminds them of ideas they previously dropped. Anna Rigmor Moxnes and Jayne Osgood (2018) describes diffraction as a way to “think-with and to think differently, and resist being drawn back to familiar modes of understanding, mirroring the known”(p.307). Bronwyn Davis’s (2014) concept of diffraction, similar to David Jardine’s (2008, 2013) concept of whiling offers us a different way of viewing, encountering, listening to, and knowing the world. Diffraction as a practice is a form of listening that requires one to be open to being affected, having an openness to differences to the multiplicities that emerge within moments between us and place. The returning of their ideas also provides another chance to rethink, reimagine, reorganize and create clearer, thicker ideas. By practicing collective listening, to humans and the more-than-human, we recognize children’s agency and create an understanding that their ideas and experiences can contribute and influence their surroundings.





Construction:
Thinking with the Complex Intersectionalities
Between Human and More-Than-Human Others



Digging Up the Underground

Beginning our first walk, we start by walking by the Residence parking lot where lots of construction has been taking place, so much so that every week that we come to visit, the routes we can take, as well as the site itself, look a bit different. Stopping at the large blue fence that marks the beginning of the construction site, we take a moment to stare in silence and take in all the different things that are happening: the loud sounds coming from machines and trucks as the dirt and concrete are moved, the big holes in the ground, and many pipes stacked on top of each other fill the void of all the holes in the ground.



Taking notice of us trying to understand what is happening, a construction worker comes towards us. The children take the opportunity to voice their questions, and he explains that they have to dig big holes for the pipes to fit underground. In an instant, the children's curiosity and uncertainty about the underground showed in their drawings and mappings of the construction site. Swiftly drawing long pipes and roughly drawing dirt, the children explain their drawings to one another, each looking slightly different as they conceptualize how pipes might travel underground. As Rinaldi states, "listening is generated by curiosity, desire, doubt, and uncertainty" (2001, p. 3). Therefore, understanding that the construction of knowledge is a group process where children can produce, share, and listen to each other's ideas, hypotheses, and theories creates space where a rich entanglement of desires and curiosity can linger and provoke one another in this process of knowledge and meaning making.





Further along on our walk we visit the 'new' forest. The children are excited to visit this new space but also full of curiosity as to why we can't be in their usual forest. As we encounter marks and new discoveries, the children soon are focused on exploring and finding new things.

Eliana: ***Stop! Shhh! Listen! I heard a 'dum dum' sound!***

Runa: ***I heard an ahhh sound!***

We all freeze in place and listen.

Whrrr.

Thud.

Bang.

Everyone all exclaims: ***What's that! It's so loud***

Theo: ***It's coming from over there!***

Yoojin: ***What could that be everyone? What is making that loud noise?***

Eliana: ***I think it's the construction! They are cutting down the trees.***

Yoojin: ***How do you think the animals feel when there is this loud noise happening in their home?***

Carter: ***The bears are going to go somewhere else because it is so loud!***

Theo: ***they will go underground to hide from the noise and stay safe!***

As we begin walking back towards Morningside, we all muse about what could be happening underground.



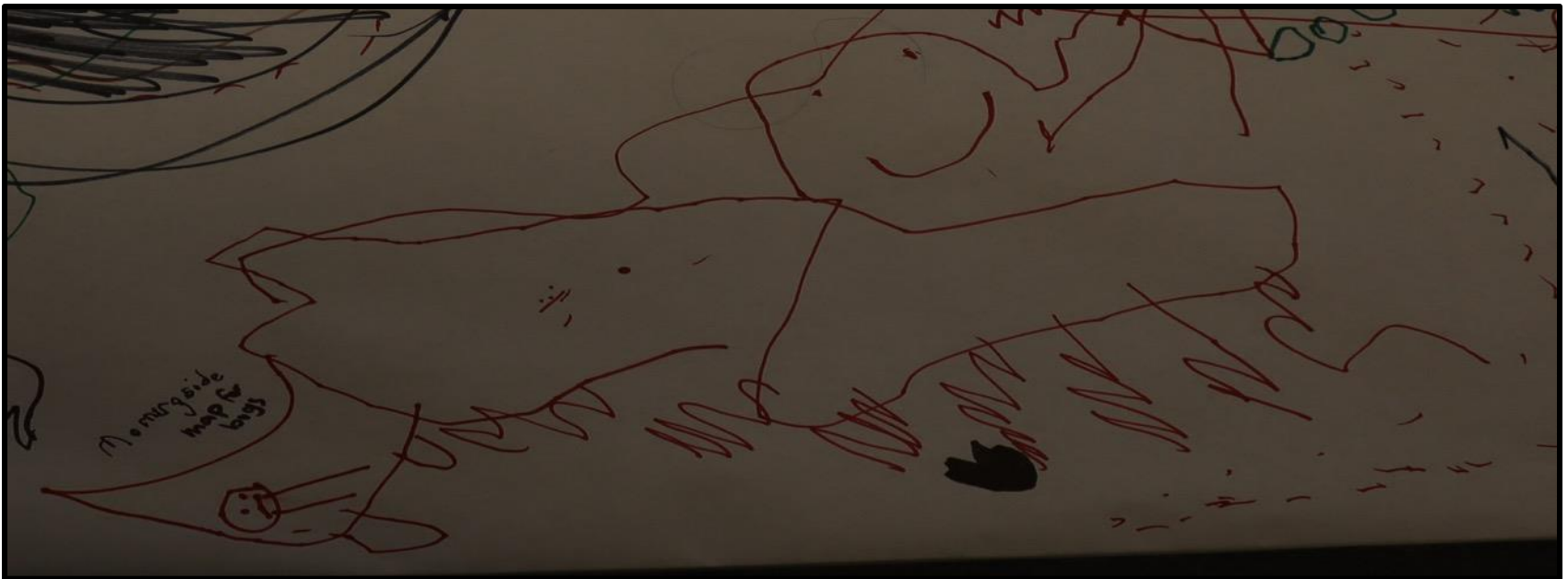


The Underground:
Creating a Safe Space for Bugs

How Might Bugs Stay Safe Underground

Following our encounter with the construction worker, curiosities and uncertainties about underground, pipes, and construction and how this intersection comes into contact with the life of others, we thought bringing in photos of the construction and pipes from a bug's perspective to have a discussion and draw out ideas would be a good starting point to materialize our questions and concerns.

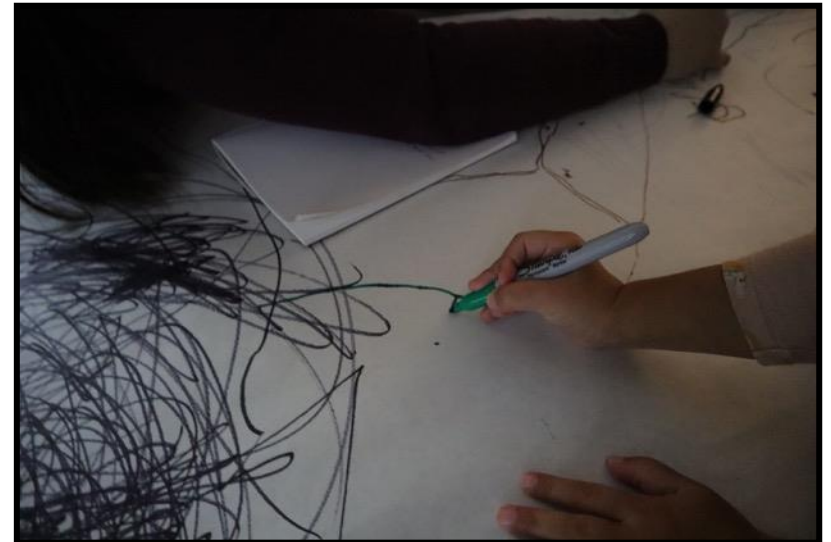
Lavina started by prompting the question: **how might bugs stay safe with the construction?** The children pondered for a moment, drawing mushrooms and spiders onto the page, Lucas then looked towards us before excitedly shouting **Morningside!** Thy asked how the bugs might get to Morningside without getting lost, suggesting making a map. He eagerly began to draw a map from the forest to Morningside, making sure to add the children, spiders, and mushrooms along the trail.





While we were drawing our map towards Morningside, Brooklyn, who was drawing a bug's home underground, pointed out that they would also be safe underground! But after noticing the photos of pipes and other children's drawings of trails from the pipes *coming into contact with her bug's home*, she said worriedly: **bugs might die if the excavator comes and digs them up!**

Iris Duhn's (2012) concept of place as assemblages calls for us to pay closer attention to and become attuned to the multiplicity of relationships, more specifically the human and more-than-human relations. As the children gather together to draw their ideas of underground, they begin to theorize how bugs might stay safe with the ongoing construction. They begin to draw an array of different things, from pipes, paths, construction, spiders, mushrooms, flowers, and homes for the bugs. These complex intersectionalities between the life of bugs underground and the need for construction for the life of humans come together, making us think of whether there is a right or wrong in what we can do when thinking of who lives all around us.



Rock Hard Ground – How Will Bugs get Underground?



On this forest walk, we were excited to find out that the old forest had finally opened again. We promptly took a visit and were greeted with fresh asphalt, which Lucy excitedly informed us that they could be called black lava rocks. This made Lavina curious and wonder aloud to the children:

Lavina: ***How do you think bugs go underground when they have this hard surface they can't get through?***

Andy: ***The bugs have to find a worm and the worms will make a tunnel. ... and then the birds will find them and eat them.***

Thy: ***Oh, so the worms make the trails underground for the bugs? But what if it's too deep? How will the bird reach the worm?***

Harper: ***They have to dig, but sometimes they might get stuck.***

Thy: ***I wonder what will happen to the bird if it gets stuck.***

This conversation lingered with Lavina and Thy as the children had stated before how bugs could in fact dig and crawl to the underground. We began to wonder about this relationship between tunnels for travelling, worms and birds, and the underground. What did the children think the underground looked like?



Exploring Their Underground – What *is* Underground?

In trying to understand how the children are visualizing the underground, we asked them ***"What is underground and what does underground look like or contain?"*** And the children eagerly shared their ideas.

Lucy shares, ***"there are torches underground!"*** She explains that when she went on vacation, she went underground on the Metro and saw that torches lined the walls. In another chat with Lucy she says that ***"bugs have no homes, no things or belongings, so when they sleep they stop where they are and rest."***

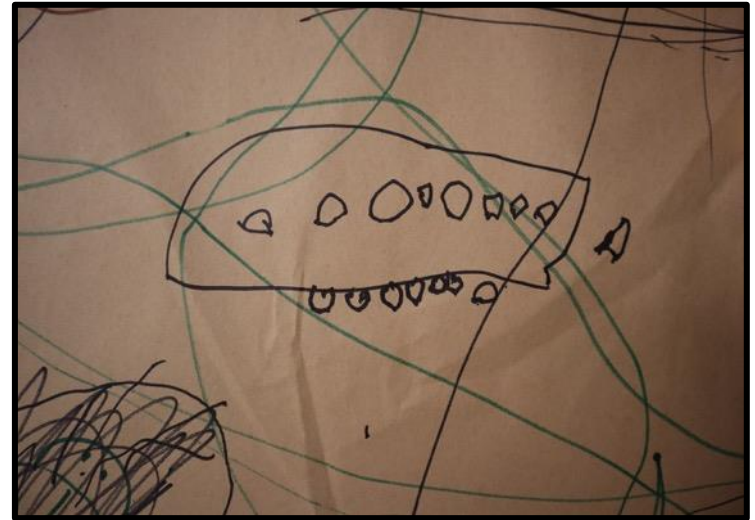
Runa has different ideas about the underground:

Runa: ***Worms dig while others crawl, worms actually don't have eyes, so they use their senses to get around underground***

Thy: ***There are torches on the wall? What do walls look like underground?***

Runa: ***There are only dirt walls***

There are many contrasting ideas among the children; the children listen to one another's ideas before drawing out their reformed theories or chiming in to say what they believe is true, acting out the motions of how bugs might travel and sleep underground.



The Dry Underground

Wanting to learn more about children's ideas about the underground provoked us to draw the underground on large brown sheets of paper that mimicked the ground and dirt. Being reminded of our conversations with the construction worker the week prior Lavina questions: ***How do these pipes have water inside?***

Lukie: ***So, when it rains, the flowers have roots that will soak up all the water that they need. The extra water will go find a pipe to underground.***

Lavina: ***Is the dirt all dry underground?***

Lukie: ***Yes. The ground is dry except for the pipes. When the flowers are thirsty again, they have to wait for the rain again.***

Lavina: ***Oh! So they can't get it from the pipes***

Lukie: ***No, they can't. They have to wait for the rain to fall again.***

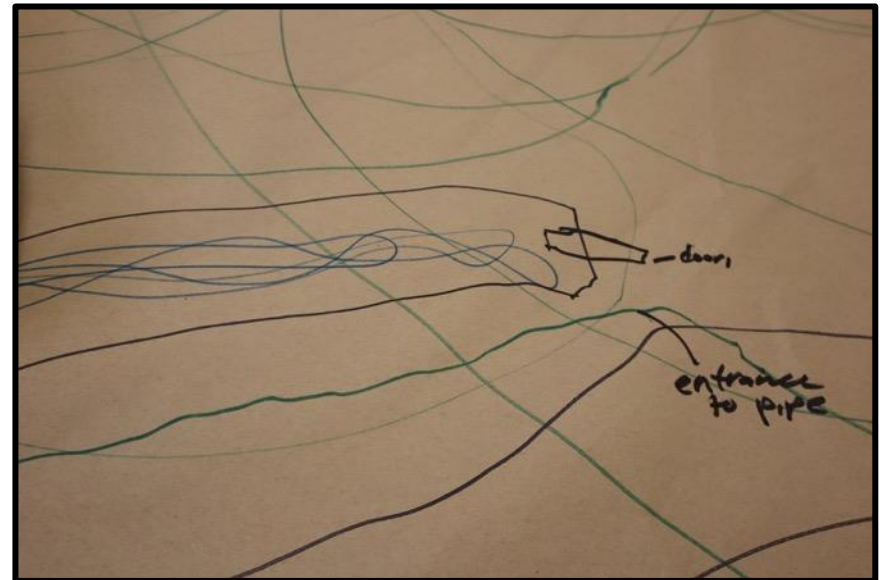
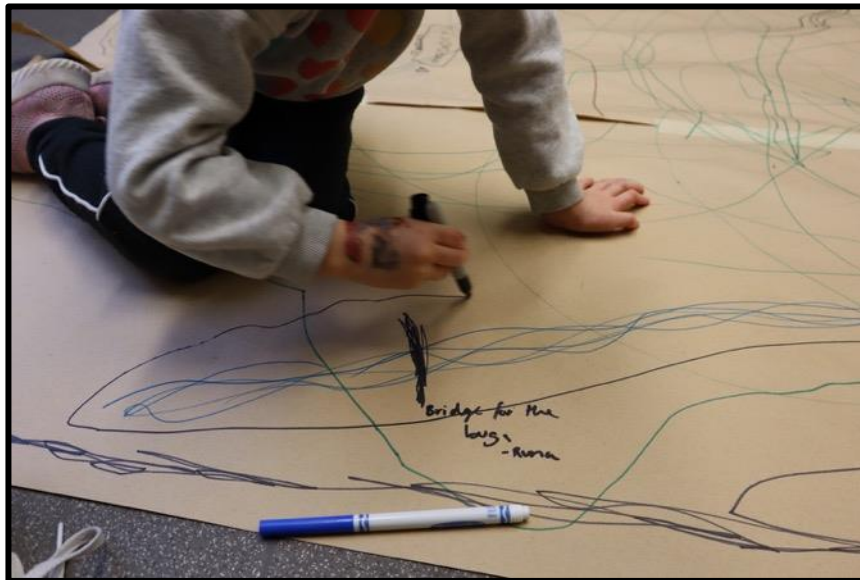
Lavina: ***But what about puddles? Why didn't that water go into the pipes?*** (pointing out the window to the puddles in the yard)

Lukie pondered on Lavina's question for a while, never answering as he wondered how or if the puddles travelled.



As this conversation with Lukie and Lavina unfolded, something else was unfolding with Thy and Runa. Thy was inspired by Lavina's mention of water, taking a blue marker and outstretching her arm to create a short stream of water across the page. Runa looked baffled and offended as if Thy had done something wrong before taking a black marker to completely encase the water, then drawing a bridge for bugs to cross, effectively containing the water by creating a water pipe with doors.

These encounters made Lavina and Thy question why children believed water could not just exist underground but had to be contained within pipes.



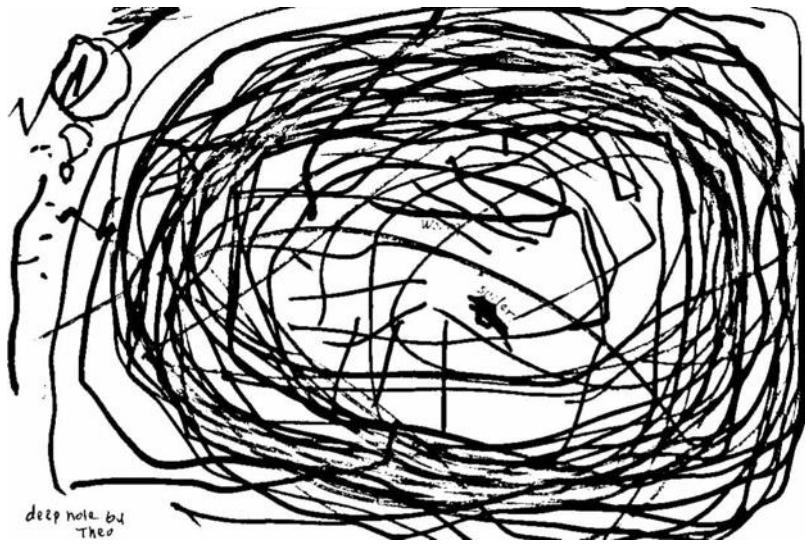
Different Noticing's – New Perspectives of Underground



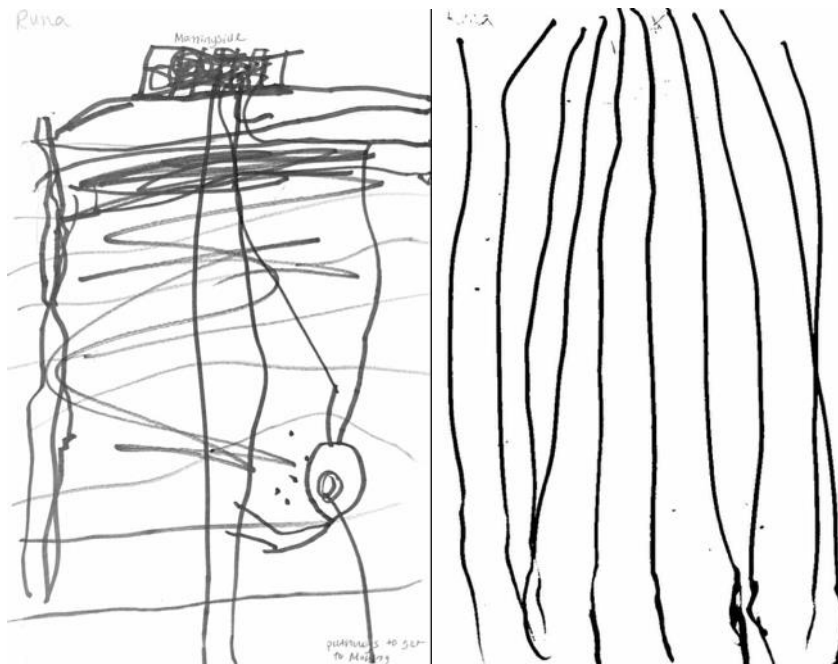
On this visit to Morningside, the children were excited to tell us about what they saw during their visit to the construction site they had with Yoojin the day before. Comparing the photos that were in the classroom and what we had observed as we passed the site that morning, we noticed that there were some differences in how it looked. Rather than a large hole with exposed pipes of different sizes and colours as shown in the photo, we saw that the hole in the photos was all boarded up and new hole close by. Curious about these differences, we brought the children back to the construction site, wondering if they could share with us the changes they noticed. As we took the time to observe and notice what was happening with the construction, something that stood out to everyone was **the absence of bugs**. It was a stark difference from our previous lively drawings and theories of where bugs lived. The mysteries of how the site transformed so drastically in one day and of the underground that was now hidden, prompted the children to theorize further about where the bugs might have gone for safety and shelter.



Settling on a large bench where we could see the ongoing construction, everyone began to materialize their theories of where the bugs might have gone through their drawings. Sharing of their theories, peering around shoulders, and observing the construction builds upon their understandings that have been co-composed through the sharing of ideas. In this time spent, we also begin to create stories as a culmination of our observations and the ideas shared between the collective slowly and gradually creating a deeper connection between self and place, leading to a sense of belonging and responsibility to the space we live alongside.

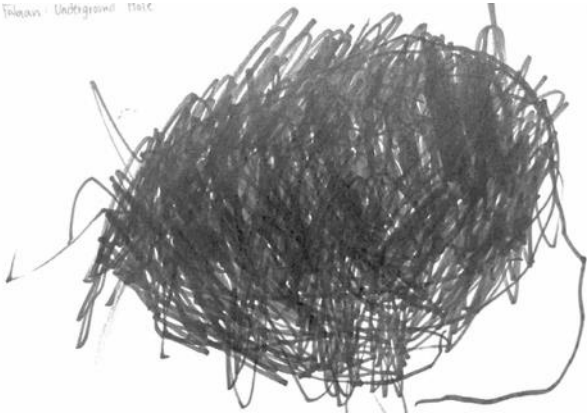


Seeing the construction, Runa decided to draw the many pathways that bugs could traverse underground to get to the safety that was Morningside. To further her idea and incorporate the pipes that she had seen the day before, she shares that even though there are a lot of pipes and tunnels, bugs can 'sense' the right pipe to use.



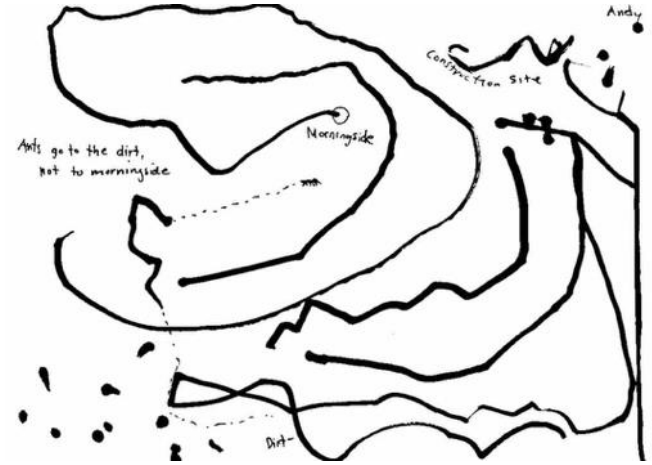
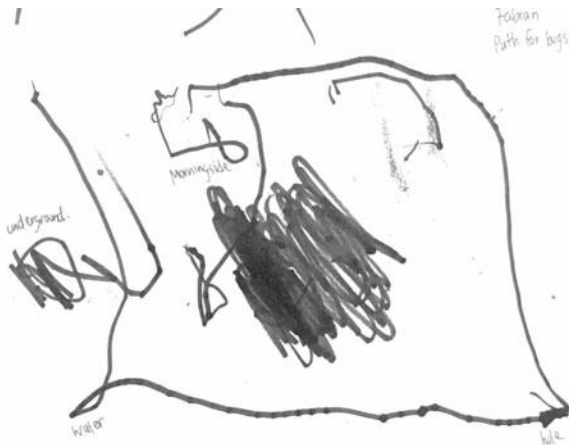
Theo's drawing brought a new theory of the underground, it is composed of many layers, each of which goes further and deeper underground. Seeing the underground in this way, changed the children's perspective of how big the underground could be. Theo also believed that the bugs would choose to go deeper down for safety.

Fabian Underground maze



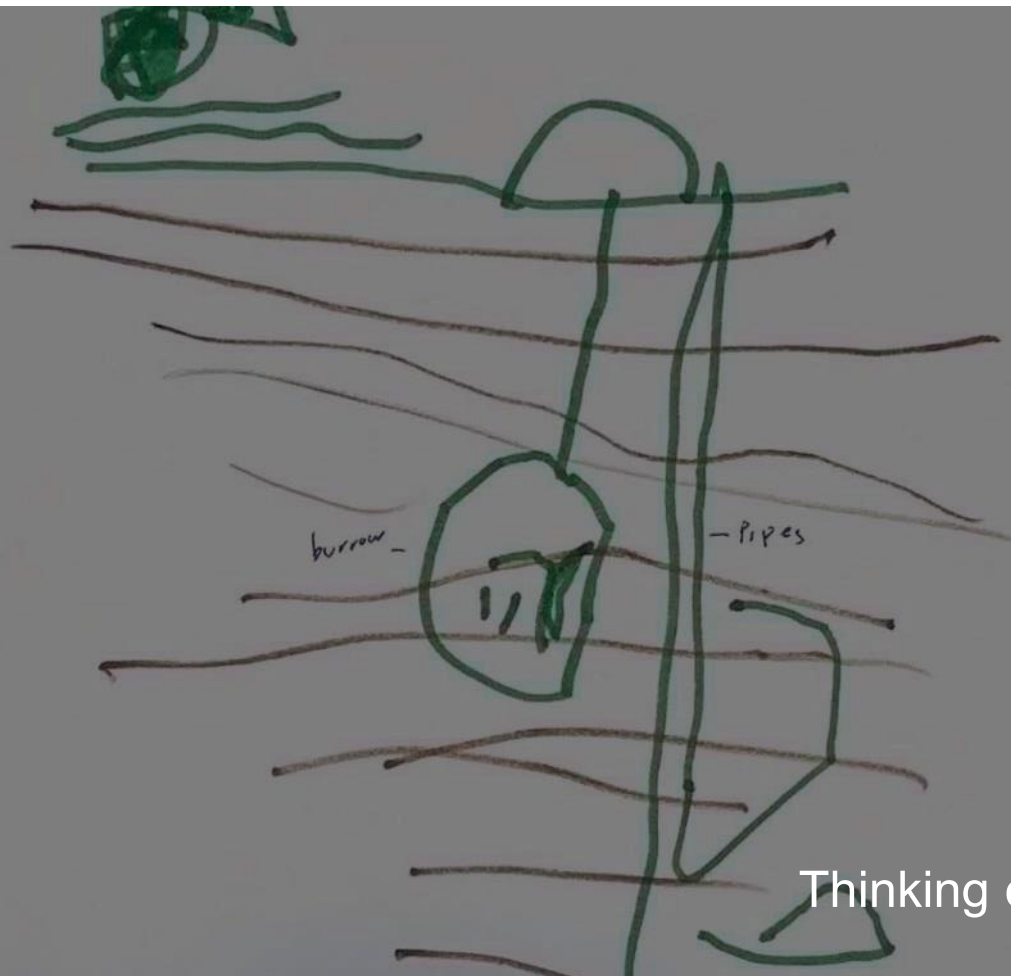
To the left, Fabian began to colour in his picture of the underground, peering over to listen to what Runa and Theo were saying. As he listened, his drawing became darker and darker, explaining how the underground hole became so deep that it was so hard to see! He accompanies this drawing with a map, noticing the sounds from both Morningside and construction, both places have made their way onto his map, with the hole being separated from the underground itself, and some water for the bugs to drink and swim also separate from the underground.

Fabian Path for bugs



Many children had stated before that bugs could and would come to Morningside for safety, but Andy's idea proved to question that idea. He made race tracks outlining areas such as Morningside, dirt, and construction, but when provoked by Thy with a small drawing of an ant, he said bugs DON'T come to Morningside for safety but to the dirt instead.

Wkie : layers



Layers:
Thinking of the Life of Others

The Apartment of Layers



Returning to our drawings from previous weeks, we were reminded of Runa's drawing with the pipe leading towards Morningside and the many layers that engulfed the pipe. As Thy mentioned this to Runa, her eyes widened as she quickly turned towards the paper, taking a moment before rushing up towards the paper to draw the layers, her arm slowly extending above her as the layers got higher and higher. Seeing the bug cutouts, Yoojin questions where the ladybug might be within these layers, and she responds without hesitation or stopping her drawing: ***they go at the top since they can fly***. Clearly stating how the different layers are for different bugs, we wondered how they might get from layer to layer. She begins to draw one horizontal line to the very right next to the centipede, making the main exit to go above ground and the vertical line going through all the layers is the many doors for bugs to use to get in between layers.



Snow Blankets – A *Layer* of Warmth

Thinking with Runa's idea of layers made us question which layers exist underground and where is each layer underground. Working with the sandbox and paper rolls we can see how pipes and sand are a layer, but what else lies underground for bugs? As the snow covered the mountain, this provoked Thy and Lavina to lean in more closely to this new layer, returning to the children with questions about the new icy *layer*.

We wondered how this might change our understanding of the underground and the many small bugs living with the cold. As we start our walk into the forest, we begin to talk about the layers that we noticed and what those layers might mean for others. Off the bat, the children were confident that the bugs and animals would be staying underground and certain that the underground was warmer than above ground when asked what the bugs and animals would do with all the snow covering the ground.

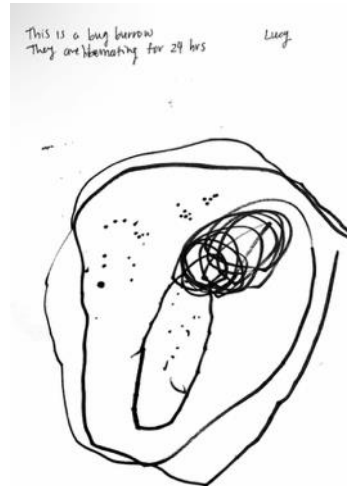
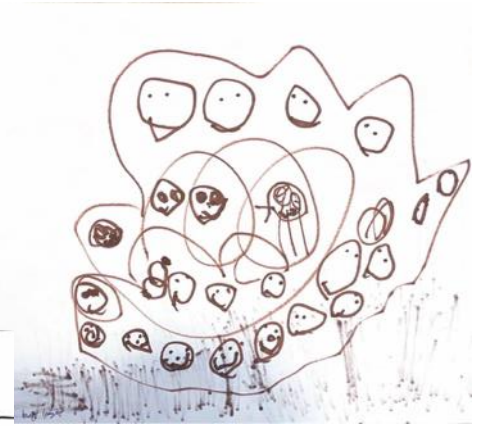
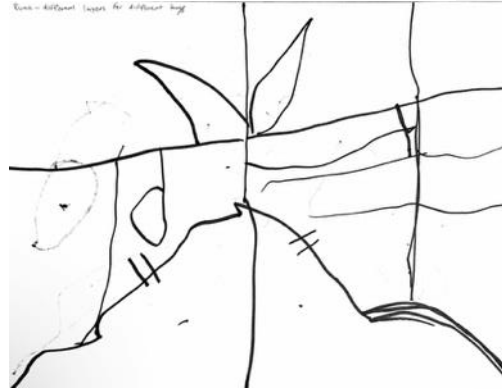
Ideas about how snow might be insulation to keep the underground warm and how bugs might go underground with all the snow emerged as we noticed how the snow was a solid layer without any holes in it.



Transforming Ideas – Where Might Bugs Live Within the Layers

Taking time to draw our ideas in the snow-covered forest, the ideas that lived with the children and other educators become evident as they bring their ideas of burrows into their drawings, adding another *layer* to their collective understanding of the underground. Through their drawings, we see different theories of how burrows might look above and underground, as well as variations of coexistence in burrows or branches that stem off of one central burrow.

With each drawing, their understandings and ideas of burrows and homes for the bugs transforms, from having one burrow to having whole neighborhoods of burrows and different layers for different types of bugs. Almost as if they are beginning to see bugs in relation to their own lives and homes when creating these drawings of burrows.



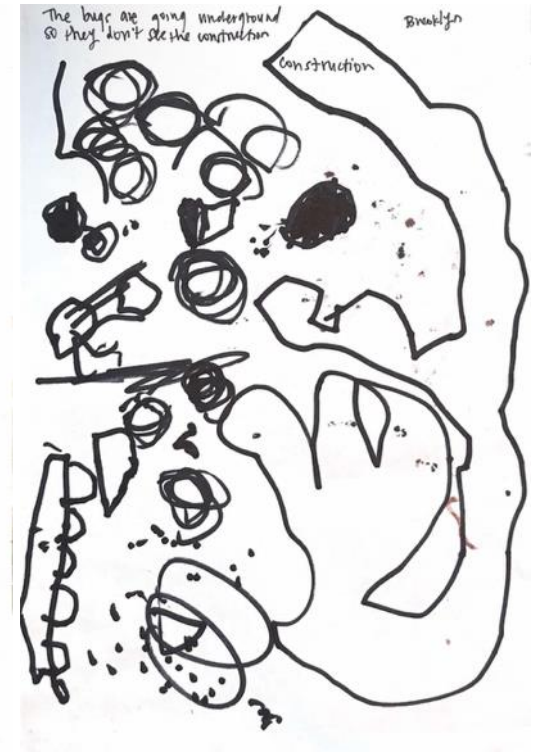
Construction Layers – The Merging of Intersections

As we focus on layers within the underground, Brooklyn is always reminding us about the current dangers that construction might have on bugs through her intricate drawings and vivid storying.

Through her drawings we can see the construction (the bold and defined lines) is beginning to bleed into the underground where the bugs are (which is the darker, rounded bits of her drawing)



“The bugs are going underground so they don’t see the construction”

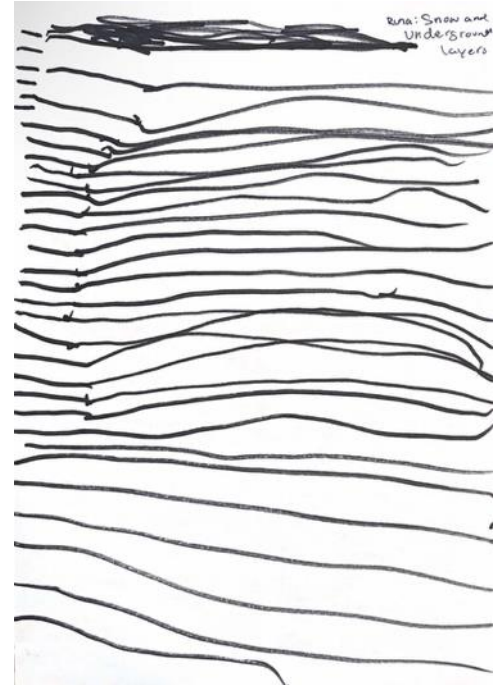


“The construction is going everywhere looking for the bugs' house because they want to dig the bugs to a better place”



While Brooklyn focuses on the construction specifically, Eliana draws a picture capturing the many layers altogether at this moment. As we walked to the forest, through the snow and trees, to get to the 'bear shelter', Eliana makes sure to remember all these details and adds them to her drawing. She sits in silence for several minutes, tilting her head and moving her hand ever so delicately, finally completing her detailed drawing of us walking through the forest with the life of bugs right below us.

Though there were many different focuses to everyone's drawing, there was always an undertone and focus on the many layers of the underground, slowly and steadily drawing long lines across the page with the snow being on top to keep the bugs warm.



Encountering Layers Face-to-Face



Walking back towards Morningside from our walk in the forest, Isabela excitedly pointed at the hill right next to the centre before grabbing my attention, ***“Look Thy! It’s the underground where the bugs live! The entrance!”***. Thy excitedly turned her head towards the hill before staring in shock, ***“Woah, I can see all the different layers; there are even rocks!”***. The children excitedly ran over to take a closer look at what layers were there, and when staring at the hill, it looked as though it had been cut right in half! Seeing the layers validated and made us question what we had theorized before, what layers we had, what might we have missed, and what was not present.

Re-turning to the Collective Layers of Underground

After encountering the layers in real life, we had a discussion with the children about what we had observed and any new ideas that had emerged from the previous encounter. The children eagerly told us about the many layers that were seen such as the grass, roots, rocks, dirt, and snow. The children eagerly drew each layer separately onto different pages, adding as much detail to each layer as possible. After having all of the different layers, Lavina and Thy began to tape the drawings together, keeping all the different layers separate.





The children pointed out all of the different layers and noticed how even though they drew the same layer, the drawing looked slightly different. This provoked Thy and Lavina to redraw the underground. Except this time we would draw one at a time, so children would be able to see and listen to what others' conceptualizations are and really be able to work together through our different ideas. We asked each child to draw different elements that we had thought to be underground, such as roots, burrows, pipes, and rocks.



Once everyone was satisfied with how the underground looked, Thy drew an ant at one side of the underground drawing before slowly tracing a line to resemble the path that the ant would dig underground. The children all gathered around, looking closely at what was unfolding in front of them, but as Thy continued to weave together a path to go to Morningside, the path would bump into the children's drawings; the rocks, roots, and burrows. Thy pauses at these intersections, looking puzzled, before asking the children how the bugs will get around with all the things underground. The children instructed Thy to go around the rocks and burrows, yelling "up!" or "down!" as they closely watch Thy's pen travel across the obstacles underground. But when we ran into a tangle of roots, we could not just go around it like a small rock, this troubled us for a moment before Lucy shouted "***They can jump over the roots!***". Thy responded asking how they will jump if they are underground and are surrounded by dirt, the children and Thy looked at the drawing puzzled trying to think of other ways to travel underground before Lavina steps in and comments, "***I remember Lucy saying roots could be bridges for bugs, can these smaller roots become paths for the bugs?***". Excitedly Sarah jumps onto her feet before coming up to the drawing and shouting "***Yea! Follow my finger!***" as she traces her finger over the tangled roots, guiding the ant through the roots towards our drawing of Morningside.



Pipes:
A New Perspective and Understanding of
Construction

How do Pipes Travel Underground?

Seeing the everchanging ideas surrounding pipes and where the bugs might go underground provoked us to work with cut-out pipes and a large sheet of brown paper that mimicked us *being* underground just as bugs might be. The children stood quietly around the large sheet of paper, not knowing how to start first. But as one pipe was placed onto the page, children slowly began stringing together a path for the bugs underground. Not knowing if this was inspired and influenced by the large straight pipes they had encountered many times and seen throughout their drawings, the children were very strategic in placing the pipes in a very straight line, with the exception of the few curved pipes. When Lavina questioned ***how the houses would get water if the pipe didn't reach the top of the houses***, the children paused, becoming puzzled by her question before returning to their straight path for the bugs. As we continued placing and re-placing pipes onto the paper, working with Runa's idea of how bugs might 'sense' through the pipes, we wonder which path was the 'right' path for bugs to go.



Pipes not Only for Travel – Protection for Bugs



After most of the pipes had been placed onto the wall, Lucas did something that both shocked and provoked Thy to pay closer attention; he carefully pried open one side of the pipe while taking his other hand to draw a spider within the pipe before slowly tucking the pipe over the spider, only having its tiny legs visible. He stands back to admire his work before I gasp in shock, ***What happened to the spider?! Where did he go?!*** Lucas looks at me and laughs before responding, ***He's hiding!***

Thy: ***Why do they need to hide?***

Lucas: ***Because the centipede will find and eat the spider!***

Thy: ***Oh, so the pipes are for hiding?***

Lucas: ***To stay safe!***

Lucas then grabs a centipede and slowly slips its body into the pipe, moving the centipede along the long and narrow pipe. When he reaches the spider, he shouts in excitement as if the spider had been caught in its hiding place.



Leaky Pipes

Approaching Carter placing green tape on top of the pipes, Lavina asks what is happening with the pipes?

Carter: *mm...it's leaking*

Lavina: *oh, and this is the way to fix the pipes?*

Carter nods and moves on to another idea. A couple minutes later, he comes back, drawing a long line, right below the leaky pipes.

Lavina: *what have you drawn there?*

Carter: *a really long worm*

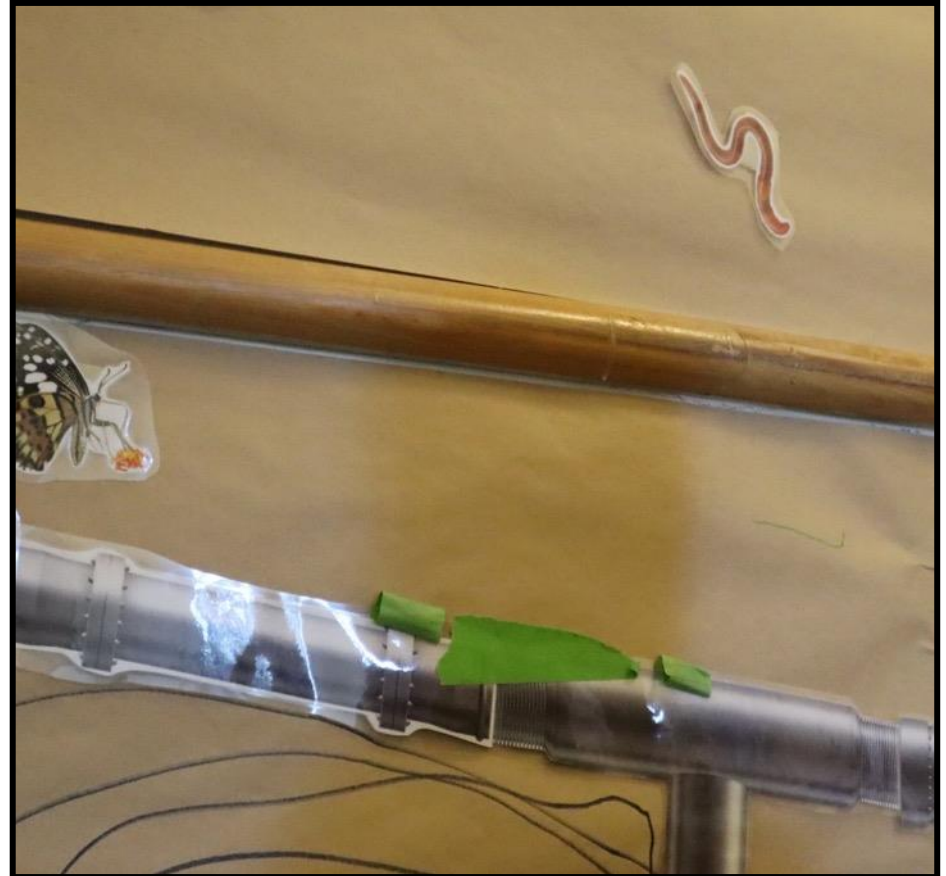
Lavina: *oh, and what are they doing there?*

Carter: *It is looking for water because it is thirsty*

Lavina: *ohhh, and has it come here because of the water leaking from the pipe? Carter nods and continues drawing*

Lavina: *that's great! They will have water from the pipe*

Carter: *and now there are lots of worms coming for the water!*



Construction Within Morningside – Creating Bug Pipe Paths

Hearing from the educators, we learn that the children have taken it upon themselves to create their own construction zone. Observing the qualities of their sandbox, they've collectively come to the conclusion that there is a burrow close to the bushes lining the sandbox. They reach this conclusion through a combination of ideas coming together: roots being wood once they permeate the surface, roots being paths for bugs underground, and roots stopping them from digging in this particular area. So, the children decide that they need to block off the area from the educators and create a safe way of travelling for the bugs. To support this idea, we bring paper tubes to supplement the other pipes they are working with. As we bring the 'pipes' to the sandbox, the children's eyes widen before excitedly grabbing shovels to dig up the sand to place the paper rolls into the ground. Lavina observes Sorme before questioning ***“where is this pipe leading to?”***. She stops in her tracks to explain to Lavina proudly, ***“It’s going to their burrow! It’s over here”***. As Lavina heads over towards Sorme, she notices the pipes are far apart, stating ***“But the pipes are not connected? Should we make it connect with the other pipes so they don’t get lost?”***. She happily agrees before starting to re-construct her path to the burrow.





While Lavina and Some were working on re-constructing their path towards the burrow, Axel who had been creating a path of his own is pulled towards Some and Lavina's desire to help create a safer path for bugs. He strategically places pipes down, and moving some pipes to lead towards the path Some was building, as if he wanted to connect the two for the bugs. Patting sand down on the corners of the pipes, he creates a hard-shell layer to encompass the pipe, stating that ***“we need to pat this down to keep the bugs safe, we need to hide the pipes”***. After connecting one end of his pipe trail to Sormes pipes, he frantically finds and digs up some singular pipes he had placed in the ground earlier. Thy and Lavina stand there in confusion before questioning what he was planning on doing with all those pipes, to which he drops everything and starts walking towards the bike path. He explains he wants to create a pipe path across the bike path towards the ‘cave’ which was on the other end of Morningside. As the cave is more secluded and surrounded by plants, Axel believes the bugs would be safer there if they wanted to travel through the pipes. Through this encounter with construction being within Morningside we can see how Axel is beginning to see Morningside as not only for children and educators but for bugs, thinking of what spaces could be shared amongst human and more-than-human others to stay safe.

Soggy Pipes

Axel brings forward the problem that the pipes are falling apart because of the rain. The children hear this problem and are eager to share their ideas. Brainstorming as a collective they came up with the idea that they need to wrap the paper tubes in layers of paper to protect it. Some children volunteer to visit the Sparks material room to look for various papers that might be the solution. Coming together, we begin discussing the options that they have brought back.

Brooklyn: **[the paper rolls] are going to melt because --**

Runa: **of the rain!**

Looking at the options, Sorme proposes an idea: to put the unravelling paper tubes into the solid cylinder

Sorme: **it's never going to rip!**

Giving this idea a try, we quickly realize that the hard cylinder is too wide and the paper tubes fall out really easily.

Brooklyn: **it's too loose!**

Runa: **we need glue – super glue!**

It might be solved by tape or glue but we give another paper a try in the meantime





After inspecting the qualities of the papers brought back to Morningside, Runa declares: ***I think this one because it is really hard but it's too big, we will need to cut it***

Paige: ***how will we know where to cut? You guys are all cutting at different spots and it's really hard to cut***

Runa looking around, sees that Lavina is writing notes, "***Can I use that?***" Pointing to the pen. Handing it to her she tries to draw a line, but it doesn't seem to work. She finds a marker instead and traces the height of the tube

Despite the line, the children are still cutting at different spots. And the paper is still really hard to cut

Paige: ***maybe this is a problem we can ask someone to help us solve? Should we bring it to morning meeting and ask if anyone has an idea?***

Lingering Thoughts



As our time with Morningside comes to an end, it feels fitting that the construction in the forest and the ones closest to the centre come to a close as well. Despite everything looking patched up and normal, we know that beyond what we can see, many things have shifted and changed underground and within the forest. Each week as we entered the centre, our surroundings would look a little different as construction workers worked tirelessly, provoking us to think with the life of others in this constant state of change. As Iris Duhn's (2012) concept of place as assemblages is rooted in an understanding of place as an ever-changing network of relationships rather than a static and fixed location, we explore the forest, construction, and underground with the children with an understanding that place will never remain static. Because of this, our inquiry has shifted, changed, and transformed through the months, not only because of the construction, but from the support, commitment and constant engagement that children, educators, and students have fostered. The inquiry and concern for the life of others with the ongoing construction lives far beyond our time there. Their concerns, theories, and understandings transform and are being reshaped with the constant change. Remaining and continuing at Morningside are still the ideas of leaky pipes and the constantly evolving and interconnected relationship between humans and the more than human.

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Lavina Tam is a 2025 graduate of Capilano University where she completed her Bachelor's degree of Early Childhood Care and Education. She has moved on to become a daycare educator for 3-5 year olds in the North Vancouver community. In her work with children, she is most interested in how the children interact with their environment and others, and how those dynamics change as they grow older and the environment changes throughout the months and years. Lavina is also passionate about creating an inclusive and welcoming space for children and their families.

Leoma (Thy) Vo is an early childhood educator based in Burnaby. She completed her Bachelor's of Early Childhood Care and Education at Capilano University in 2025. Through her studies and work, she is inspired by critical place-based pedagogies and the reconceptualist perspective. She hopes to both bring and create more transformative views of children within and with place. With these practices in mind, her work focuses heavily on inclusivity by honouring the different ways in which children interact with the world around them.