

# Physical Literacy and Nature Exploration (PLANE): Enhancing Connections Between Families and Nature

*Little Mountain Neighbourhood House / UBC Environmental Sciences*

***Cambie-Riley Park Neighbourhood, Vancouver BC***

**September 2017 - April 2018**

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# Executive Summary

Time spent in natural environments has been proven to be beneficial for both child development and for the physical and emotional health and wellbeing of all age groups. As a family, spending time outdoors not only improves personal development and health, but can strengthen bonds and relationships between children and their caretakers. With this in mind, this project focussed on understanding family-nature interactions and also sought to foster family-nature interactions through the creation of a community program. In collaboration with Little Mountain Neighbourhood House (LMNH), we gathered information, tools and resources in order to develop and implement a physical literacy and nature exploration programs (PLANE) that would be delivered by LMNH.

Project Objectives
<b>Identify the perceptions and behaviours</b> of families in the Little Mountain Neighbourhood House Community in relation to outdoor nature activities.
<b>Identify the barriers</b> that families in the Little Mountain Neighbourhood House Community face when attempting to engage in outdoor nature activities.
Develop a <b>PLANE community garden program</b> with Little Mountain Neighbourhood House and Riley Park Community Garden.

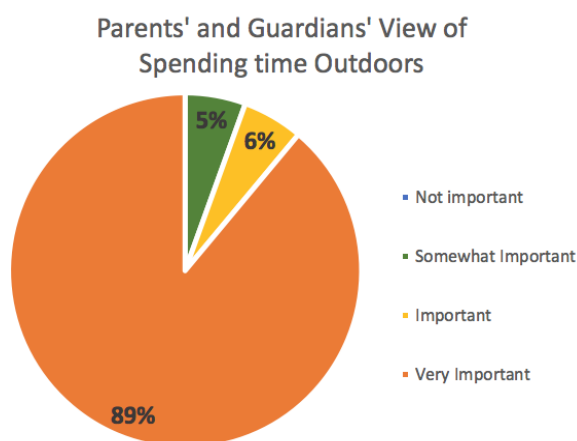
To meet these objectives, our project consisted of 1) a literature review to understand the benefits of physical literacy and outdoor nature experiences for child development, and to also understand the importance of incorporating pedagogical approaches into teaching methods, 2) the collection of information regarding community behaviours and perceptions via questionnaires, interviews, and a focus group, and 3) the development and implementation of a 7 week nature based outdoor program for families with young children (aged 0-6), featured around community garden involvement and field-trips to local food production areas (e.g. UBC farm).

## Questionnaire, Interviews and Focus Group

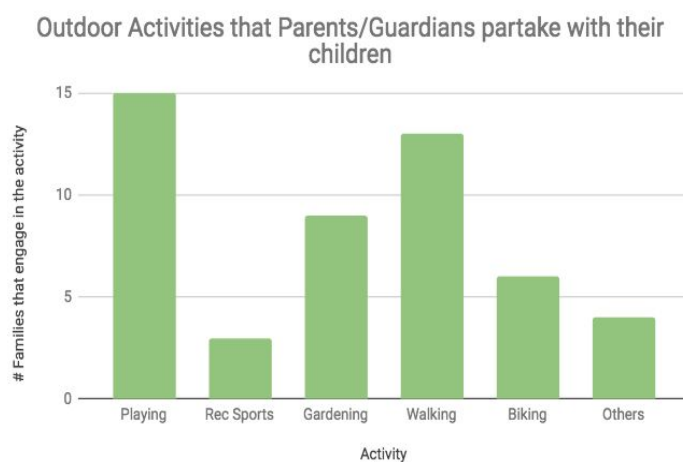
The questionnaires and focus group were a means of gaining a sense of how families in the LMNH community currently feel towards nature, outdoor experiences, how important they believe it is to have such experiences as a family, and what barriers they encounter when wanting to spend time outdoors. Questionnaires (Appendix A) were completed by 18 parents/guardians, and interviews (Appendix B) were conducted with 11 children, all of whom attend current LMNH programs (e.g. Family Drop-In, Syrian Community Kitchen). A focus group session was held with 5 of the parents/guardians who had completed the questionnaire (See Appendix C for focus group questions). Through the questionnaires and discussions, a better understanding of community engagement with nature and nature activities was obtained.

### What the community thinks

All of the parents/guardians who completed the questionnaire and who attended the focus group agreed that spending time outdoors as a family holds some importance (Figure ES.1). Reasons, as stated by participants, include stress relief, getting fresh air, and having more opportunities for movement and physical exercise. Families who participated in the research spend time outdoors doing a wide variety of activities (Figure ES.2).



**Figure ES.1.** Percent responses of parents/guardians from the questionnaire when asked to scale how important it is to spend time outdoors.



**Figure ES.2.** The types of outdoor activities that families partake in together throughout the year.

As part of the discussions, parents/guardians noted that some of the challenges they face when planning outdoor family activities tend to be related to the weather, cost, and time constraints (Figure ES.3). Extra costs (i.e. travel, entrance fees etc.) associated with taking children to more exciting nature areas (e.g. Bloedel Conservation Center, Capilano Suspension

Bridge), further limits the types of activities they do outdoors with their children.



**Figure ES.3.** Words often mentioned during the focus group session and questionnaire sessions regarding what hinders families from spending more time outdoors.

### PLANE Community Garden Program

Using the results from the questionnaires, interviews and focus group sessions, we prepared a PLANE program that both aligns with community interests and that addresses some of the barriers community members face. As gardening was one of the top three activities families indicated that they participate in with their children (Figure ES.2), lesson plans were developed to pilot an eight week Community Garden program at Riley Park Community Garden (Appendix D). The program is designed to incorporate nature based education, physical literacy activities and play-based pedagogies tailored to both the caretakers and the children. Participation was free for families who chose to attend, and field trips to UBC Farm and to Fresh Roots were included, giving families the chance to have new and interesting experiences that they might have thought to be otherwise inaccessible. Thus, with the knowledge of community interest and of the barriers families face, we were able to design and implement a program that is both educational and interactive for families in the neighbourhood (Figure ES.4).

**Figure ES.4** Parents and their children working the soil at the first PLANE community garden program session.



# Physical Literacy and Nature Exploration (PLANE): Enhancing Connections Between Families and Nature

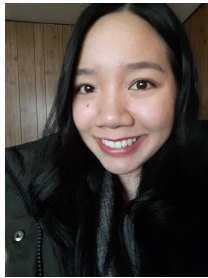
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***Cambie-Riley Park Neighbourhood, Vancouver BC***

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## Author Bios

**Camille** is a fifth year Environmental Science student at the University of British Columbia. Through her church youth group's program, "Greeneration", she has done volunteer activities towards nature stewardship. She is currently a student employee at Statistics Canada, exposing her to surveys and the processes surrounding it. She is passionate of being able to find outlets for the current and upcoming generation to support the environment and hope to use her skills and experience to positively contribute in the project.



**Jenny** is a fifth-year environmental sciences student at the University of British Columbia. Throughout her childhood, volunteerism and community have been heavily embedded in her upbringing. She has volunteered with Frog Hollow Neighbourhood House in various programs ranging from a youth led gardening group to a youth leadership program. She has also had previous work placements with Agriculture and Agri-food Canada and TerraBioGen, focusing on research related to sustainable food practices. Equipped with her love for the environment and helping people, she hopes to positively contribute to the proposed program with these values in mind.

**Celine** is a fifth year student in Environmental Sciences at the University of British Columbia. She grew up helping her grandfather in her backyard garden, has spent multiple co-op work terms with Agriculture and Agri-food Canada and is passionate about responsible and sustainable food production. She has volunteered at the UBC farm, with her parish youth group and with "Kids in the Woods Initiative", an outdoor education program for children aged 4-8. Celine seeks to combine these experiences and her passions to contribute to nature education and sustainability initiatives such as this.



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# 1. Introduction

The overarching goal of our research was to work with Little Mountain Neighbourhood House to prepare for, create, and pilot a physical literacy and nature exploration (PLANE) program focused on community gardening. To do so, an awareness of the communities needs and an understanding of the components of community program development were essential. The objectives below have guided this project over the past 8 months:

Objective	Details
<b>1. Identify the perceptions and behaviours</b> of families in the Little Mountain Neighbourhood House Community in relation to outdoor nature activities.	<p><b>a) Perceptions:</b> <i>Do families believe it is important to spend time in nature? Would families be interested in outdoor nature programs in their community? Would such a program agree with their current thinking? Understanding how families perceive nature and nature activities can help us identify how a community program can meet their needs.</i></p> <p><b>b) Behaviours:</b> <i>Are families in the Mount Pleasant area actively participating in outdoor nature activities? What sorts of activities do they do together and why? Knowing what families do outdoors gives an idea of community interest, and can help program developers when developing community programs.</i></p>
<b>2. Identify the barriers</b> that families in the Little Mountain Neighbourhood House Community face when attempting to engage in outdoor nature activities.	<i>Understanding what limits families from having positive outdoor nature experiences can help us understand how a community program might remove these barriers. e.g. are families only doing certain activities because of location convenience, because there are resources available or because weather permits? How can these barriers be overcome?</i>
<b>3. Develop a PLANE community garden program</b> with Little Mountain Neighbourhood House and Riley Park Community Garden.	<p><b>a) Inspiration:</b> <i>What components of a program (nature program, community garden program etc.) would appeal most to families?</i></p> <p><b>b) Structure:</b> <i>How can a program be structured to meet the needs and interests of the community? How can physical literacy and pedagogical approaches be incorporated?</i></p> <p><b>c) Skill Development:</b> <i>What sort of activities and material should be incorporated into the program itinerary and lesson plans? How can material be taught so that families can continue to engage in outdoor activities after the program is complete?.</i></p>



## 2. Summary of Relevant Literature

To align with the goals of the PLANE program itself, background research was conducted in order to best create and design a physical literacy and nature education program. With the current trends that encourage a more technologically centric lifestyle, children, teenagers and adults alike are becoming more and more separated from the natural world, even though the benefits of nature exposure have been well documented throughout literature. The knowledge of the benefits of nature exposure for families can help in city park planning and nature program development - so that families have access to resources that encourage their children to spend more time outdoors. Many outdoor nature based programs worldwide further focus on physical literacy and play based pedagogies as key concepts of program development, and these concepts were therefore included in our project. Some resources that helped inform our program development are listed below:

PLANE Program Planning Toolkit: Ideas for Physical Literacy and Nature Exploration with Children. <i>Little Mountain Neighbourhood House</i>	Chaye, O. (2016)
<a href="#">Wild beginnings: How a san antonio initiative instills the love of nature in young children.</a> /	Kharod, D., & Arreguín-Anderson, M. G. (2015)
<a href="#">Active families in the great outdoors: A program to promote family outdoor physical activity.</a>	Flynn, J. I., Bassett, D. R., Fouts, H. N., Thompson, D. L., & Coe, D. P. (2017)
<a href="#">Experiencing the 'wild woods': The impact of pedagogy on children's experience of a natural environment.</a>	Mawson, W. B. (2014)
Design and evaluation of a park prescription program for stress reduction and health promotion in low-income families: <a href="#">The stay healthy in nature everyday (SHINE) study protocol.</a>	Razani, N., Kohn, M., Wells, N., Thompson, D., Flores, H., & Rutherford, G. (2016)
<a href="#">Sparking interest in Nature—Family style.</a>	Satterlee, D. J., & Cormons, G. D. (2008)
Urban Nature Exploration Pilot Project: Final Report. <i>Little Mountain Neighbourhood House</i>	Wiseman, C.D. (2015).

Using the resources available to us, we focused on the benefits of nature exposure, the inclusion of physical literacy in program itinerary, and the importance of pedagogical approaches to inform program development.

## 2.1 Benefits of Nature Exposure

A child's interaction with nature at an early age can benefit their cognitive development, psychological well-being, physical development, and social abilities (Chawla, 2015; Haas & Ashman, 2014). Nature interactions essentially place children in situations where they must subconsciously problem solve either on their own or in groups, make connections, challenge themselves, and develop their own sense of competence and confidence (Chalwa, 2015). Furthermore, nature interactions can be a form of stress prevention and relief for both children and adults (Loux, 2010, Razani et al., 2016).

As sustainability and climate change become increasingly important subjects of concern, encouraging families, especially children, in creating these relationships with nature can help build a generation that better understands, appreciates and interacts with the natural world.

## 2.2 Physical Literacy

Physical and Health Education (PHE) Canada define physical literacy as the ability of an individual to "move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person". This concept extends beyond being physically active, helping in the development of a child's long term physical and cognitive abilities (Castelli et al., 2015). Time spent outdoors has direct correlations with increased physical activity, and has, in many scenarios proven to reduce obesity (Flett et al., 2010; Flynn et al., 2017). As a nature program may be a part of a child's first exposure to non-academic system of learning, the constant availability of physical tasks is vital.

Incorporating physical literacy and physical activities into a nature program would not only benefit child development, but also the wellbeing of parents and guardians. Physical activity is correlated with enhanced vitality and can reduce/prevent the effects of chronic physical and mental conditions (Molina-García et al., 2011; Schuit, 2006). With both the caretakers and children's participation being a key component of our program's objectives, exposure to outdoor physical activities can shift the mindset of all participants towards developing a healthier lifestyle.

## 2.3 Play-Based Pedagogy

Play-based pedagogy is a method of teaching that balances play based learning with intentional teaching (Edwards, 2017). It is defined by three different types of play; open ended, modelled (students observe demonstrations by instructors) and structured play (teachers incorporate informative materials to develop conceptual understanding) (Edwards, 2017). Play-based pedagogy targets children's natural learning curve, further giving them the freedom to make their own choices and initiate their own learning. This induces a sense of motivation, which often leads to more active participation and collaboration (Brooker, 2011; Broadbent, 2015). Taking a play based pedagogical approach for program development will ensure that children are both learning and developing their own sense of self.

As the program is meant to be family oriented, an understanding of parent/guardian-child interactions is beneficial. In an ideal learning environment, children would be exposed to both supported play and partnerships with adults (Giesbrecht, 2012). Treating each other as equals with the same level of capability and respect is a core concept, and comes in the form of listening to each other and engaging in a respectful conversation (Lu & Montague, 2016). The foundation is centered around the concept of shared tasks where responsibility is given to everyone equally (Brooker, 2011). By considering how the interactions of instructors and parents affect children's learning environment, we can effectively prepare a program that looks to not only meaningfully engage children during the program sessions, but also during time on their own and with family.

### 3. Community Input

Three methods of data collection were used to gain the necessary information from the families that participate in Little Mountain Neighbourhood House programs—an adult questionnaire, a child’s interview and a focus group. The adult questionnaire was used to collect data from both the individual and their family. The children’s interview allowed for us to collect data regarding the views of the younger members of the family. A focus group was then done in order to further discuss some of the points raised in the questionnaire and provide an opportunity for the participants to elaborate on the research objectives.

We collected 18 adult questionnaires, 11 child’s interviews and 5 focus group participants.

#### 3.1 Perceptions

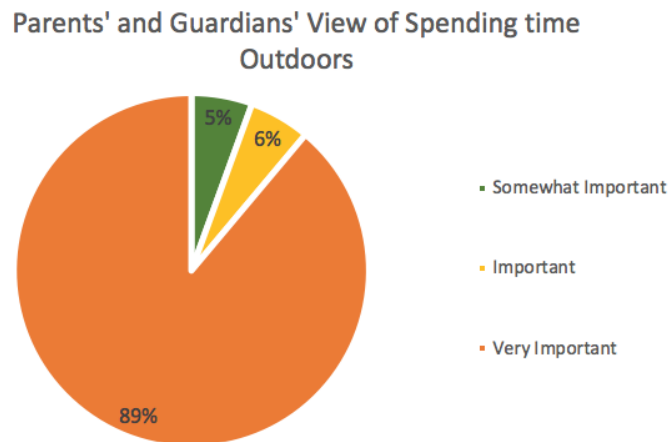
*Objective 1a: What are the perception of the families’ of Little Mountain Neighbourhood House Community towards outdoor nature activities?*

Majority of the parents and guardians believe that it is **very important** to spend time outdoors citing that spending time outdoors have **physical, mental** and **developmental** benefits to all the members of the family.

The data regarding the perception of families towards outdoors were extracted from the following:

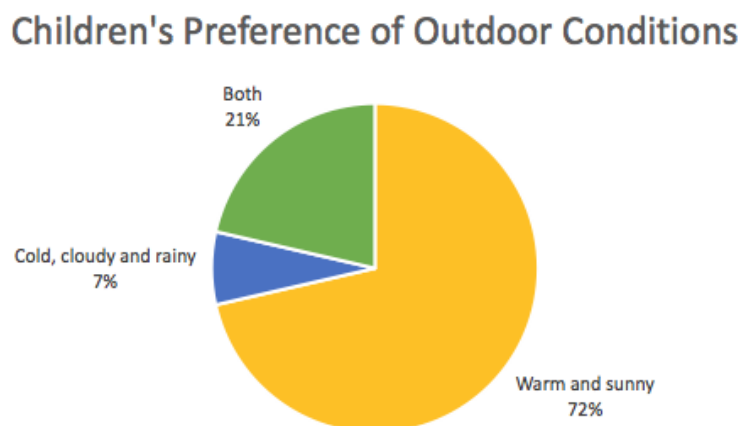
Adult Questionnaire	Q2: Importance of spending time outdoors + why? Q9: Reasons to why parent/guardian would want to increase time spent outdoors with child
Children’s Interview	Q1a& b: Weather preference when spending time outdoors
Focus Group Discussion prompts	<i>“Do you believe it is important for your family to connect with nature and why.”</i>

About 90% of the parent and guardian responses have agreed that it is very important to spend time outdoors (Figure 3.1a). Parents and guardians cited the health benefits of spending time outdoors both physically and mentally. Parents and guardians would increase their time with the children outdoors upon the children's request. Parents and guardians believe it is important spend time outdoors as a family in order to build a relationship with each other and other families, to provide opportunities for movement and exercise, and to gain energy and fresh air.



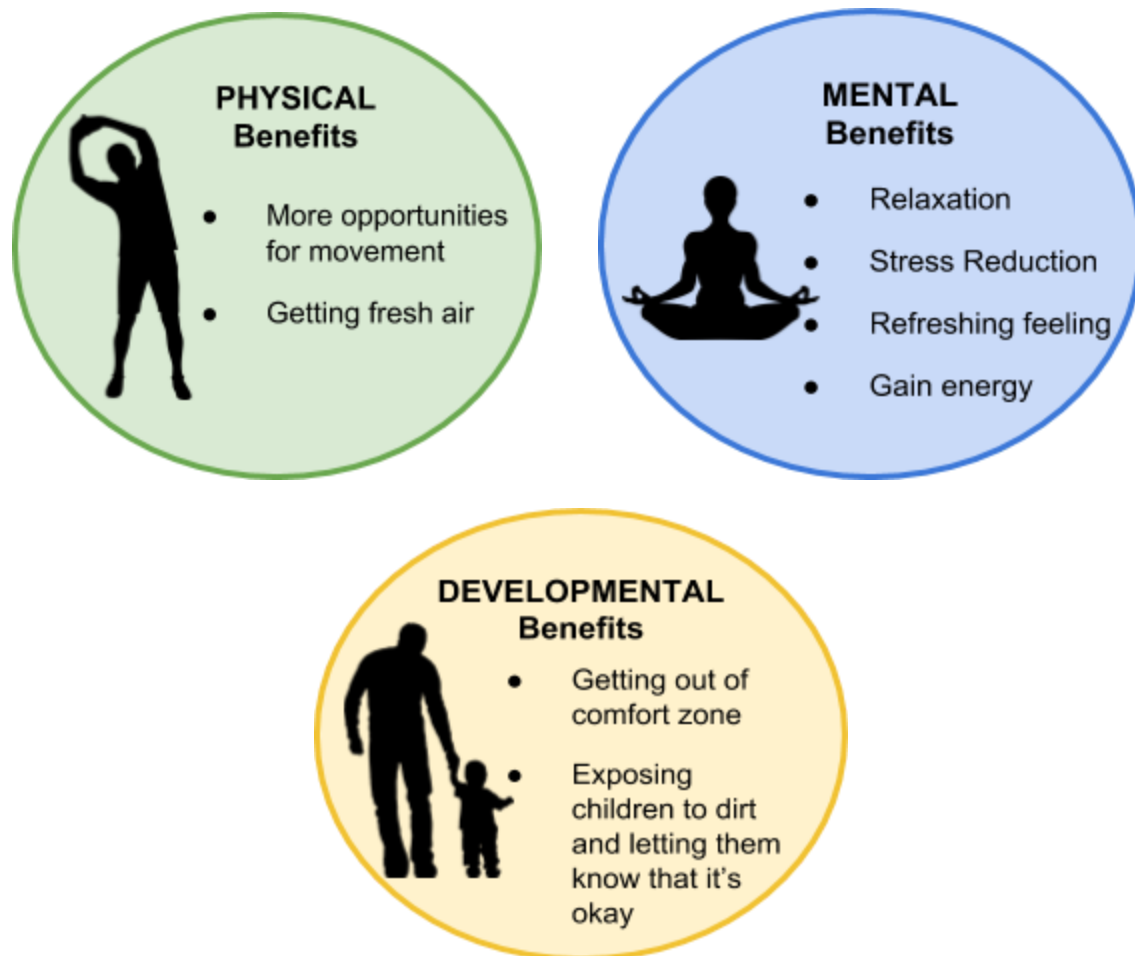
**Figure 3.1a** Percent response of parents or guardians when asked to scale how important it is to spend time outdoors. None of the parent and guardian participants have responded to the question with “Not Important” and therefore excluded from the graph.

The majority of the children interviewed prefer spending time outdoors during the summer season when it is warm and sunny. There were a few that do not have a preference of the outdoor conditions and there are lesser number of children who only preferred the cold, cloudy and rainy conditions (Figure 3.1b)



**Figure 3.1b** The figure shows the distribution of the children's preference of the conditions in the outdoors that would make them spend time outdoors.

Focus group participants had similar responses to the questionnaire results when asked why it is important to spend time outdoors as a family. Below, by category, are some of the reasons parents and guardians believe it is important to spend time outdoors as a family:



## 3.2 Behaviours

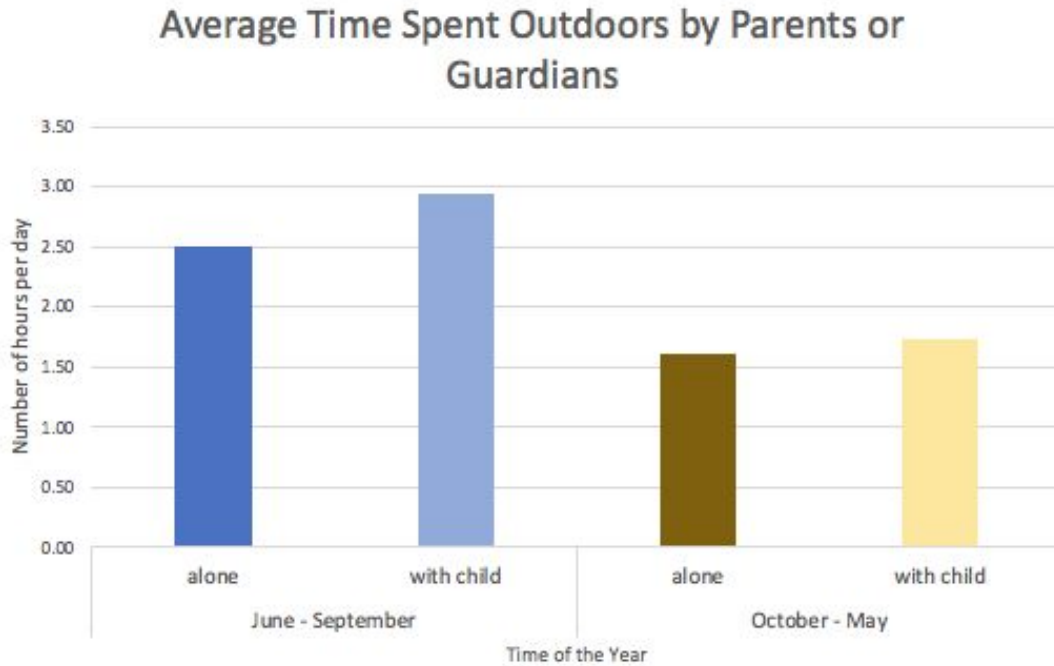
*Objective 1b: What are the families' of Little Mountain Neighbourhood House Community behaviours towards outdoor nature activities?*

Most families spend **at least 1.5 hours per day** throughout the year outdoors with the most common of activities involve **playing** and **walking**. **Fresh air** and **stress relief** are two of the most common reasons why parents and guardians spend time in the outdoor places, with preference of outdoor places that are **free** and **easy to access**.

The data regarding the behaviour of families towards outdoors were extracted from:

Adult Questionnaire	Q2: <i>"Do you enjoy spending time outdoors? Why?"</i> Q3 & Q5: Number of hours spent outdoors (alone and with children) Q10 & Q12: Types of activities partaken (alone and with children)
Children's Interview	Q1: <i>"Do you like spending time outside?"</i>
Focus Group Discussion Prompts	<i>"What is your favourite outdoor location and why?"</i> - shows what they consider as "outdoor nature" <i>"What motivates you to do your past/present outdoor activities?"</i>

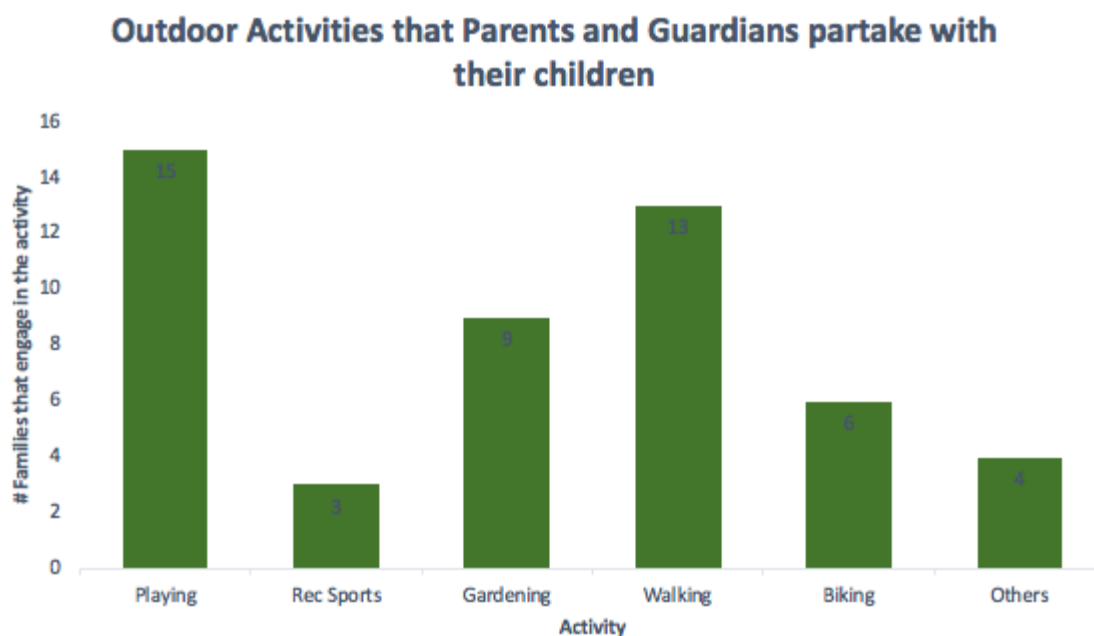
Results showed that most families spend at least 1.5 hours per day throughout the year outdoors (Figure 3.1a). In the summer, families spend more time outdoors during the summer months, about 3 hours per day with the children and 2.5 hours per day without the child(ren). During the rest of the year, the parents or guardians spend just above 1.5 hours per day by themselves in the outdoors and about 1.75 hours per day with their child(ren). Overall, parents or guardians spend more time outdoors when with their children throughout the year.



**Figure 3.2a** Average amount of time a parent or guardian spends outdoors during different seasons while comparing time spent alone and with child(ren).

All of the children interviewed noted that they enjoy spending time outdoors. The majority of families spend time outdoors playing and walking (Figure 3.2b). 'Other' outdoor activities mentioned by the parents/guardians include going to the beach and working out (with/without their child). Interestingly, most parents and guardians are satisfied with the amount of time they spend outdoors alone more than with their children.





**Figure 3.2b** The types of outdoor activities that families partake in together throughout the year.

During the focus group, parents had different perspectives as to what was considered ‘outdoors’. When describing their favourite outdoor places, what was considered outdoors ranged from locations in the city, to more natural landscapes (e.g. Gastown, Northern BC Coast). As some of the participants of the focus group were immigrants, a few pointed out that they enjoyed some outdoor locations around Vancouver due to the fact that they are reminded of their hometown (e.g. the seawall).

Focus group participants also had a number of answers as to what motivates them to spend time outdoors. Participants focused on the benefits of going outdoors as reasons that motivate them to go outdoors. Benefits mentioned by the participants included getting exercise, being exposed to fresh air, spending time with family and friends and reducing anxiety and stress. Most agreed that they are more motivated to take their children to outdoor locations that are free and easily accessible.

Participants have noted that summer outdoor programs are good incentives, especially when they provide a means for families to participate in activities that would otherwise be too expensive or inaccessible due to commute time and planning (e.g. Bloedel Conservation Center at Queen Elizabeth Park, Capilano Suspension Bridge). One parent mentioned the Vancouver Inspiration Pass, available at libraries throughout Vancouver, as one such program that has provided a means for her family to access different adventures throughout the city.

### 3.3 Barriers

*Objective 2: What are the barriers that families in the Little Mountain Neighbourhood House Community face when attempting to engage in outdoor nature activities?*

Most parents and guardians cite **rain, cold weather, time constraints** and **costs** associated with the place and activities as the reasons of them spending less time outdoors than would have preferred.

The data regarding the barriers that families face when attempting to engage outdoors were extracted from:

Adult Questionnaire	Q5: Why parents/ guardians are satisfied / not satisfied with the time they spend outdoors
Focus Group Discussion prompts	<p><i>“In the initial questionnaire we conducted with you, many of you responded that you enjoy going to parks with your children, however were limited by the unfavourable weather and time constraints. Does anybody have anything they wish to add to this statement?”</i></p> <p>Negative remarks from: <i>“Think about an experience you had from an outdoor activity and describe to us how it made you feel.”</i></p>



**Figure 3.3** The figure above shows the words often mentioned during the focus group meeting and questionnaire sessions regarding to what hinders families from spending more time outdoors.

Another challenge of spending time outdoors, as mentioned during the focus group session, was the fact that it makes it hard for parents and guardians to stay on schedule (i.e. have dinner at a reasonable hour) due to the time spent outdoors. However, participants mentioned that although it is usually worthwhile, it is also an extra hassle. Interactions with negative influences, such as teenagers drinking or swearing loudly in front of children can deter families from certain locations (e.g. camping). Interactions with fearful situations, such as dogs, can deter parents/guardians and or children from certain areas. Park cleanliness plays a role in positive an experience families may have (e.g. stepping in dog poop). The parents also cited the costs of getting involved in various activities as a hindrance to them. For example, going up in the mountains during winter to enjoy the snow; but due to the cost of a day pass, they would either not go or look for a local park with a slope for the children to play around with.

During the focus group discussion, strategies to overcome these challenges were also discussed. Parents provided various possible solutions to overcome these challenges such as having a good rain gear or proper attire for any type of weather, choosing a convenient location to take the family outdoors, being prepared for any changes, being involved in the same activities as the kids, and going with other families/friends.

## 4. Community Garden Program 2018

*Objective 3: Develop a PLANE community garden program with Little Mountain Neighbourhood House and Riley Park Community Garden.*

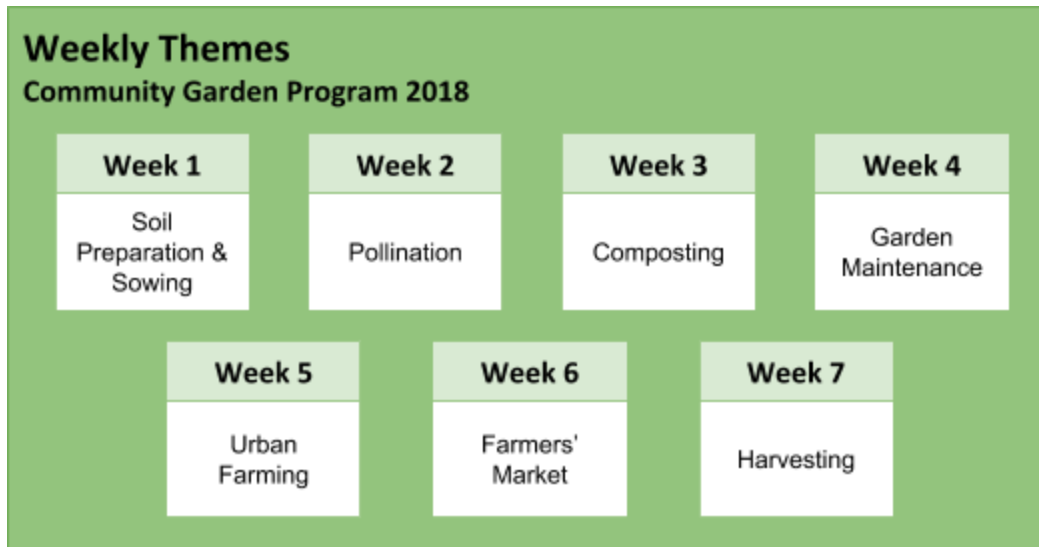
Based on the needs of young families in the Riley Park community and the barriers they face when attempting to interact with their young children aged 0-6 in an outdoor setting, a 7 week nature-based program was developed as a recommendation to help alleviate these identified challenges. This program is a part of a series of family programs, each designed to target a different age group or concept—operating under the umbrella program known as Physical Literacy and Nature Exploration (PLANE).

### 4.1 Inspiration Behind the Program

From the questionnaires and interviews conducted, gardening was one of the top three activities that families do together outdoors (Figure 3.2b). Taking from this, a community garden themed program seemed to align with the interests of the community, and such a program was thought to inspire participation from families and encourage them to spend time outdoors.

### 4.2 Program Structure

The community garden approach is based on the overarching concept of food production— this helps connect the purpose of smaller concepts such as gardening skills, pollination, composting alternatives, garden maintenance and harvesting. A logical flow of ideas is important for children to understand the purpose of their actions, resulting in the children engaging with their experiences in a meaningful and sustainable way. Themes were chosen for each week, and the lesson plans were developed based on the weekly theme (Figure 4.3).



**Figure 4.3.** Weekly themes for the Spring Community Garden Program. The Pollination session was held at UBC Farm, and the Urban Farming Session was held at Fresh Roots Farm at David Thompson Secondary.

With our focus set on young families, we based the program on the concepts of nature exposure, physical literacy and play-based pedagogy. These three areas are intertwined and dependent on one another to be successful and effective. Nature exposure provides an unfiltered environment for children to initiate their own learning, which coincidentally includes physical awareness as they move about to achieve their learning goals.

A community garden approach was found to be the most appropriate program concept that encapsulated the benefits of nature exposure, physical literacy, and play-based pedagogy (Table 1).

**Table 1.** Description of how each component was incorporated into the structure and implementation of the PLANE Community Garden Program, 2018.

Nature Exposure	Based in Riley Park Community Garden, families are able to witness first hand how a community garden functions and they can further be immersed in the processes behind nature (i.e. learn how plants grow by planting seed, watching them grow and harvesting at the end of the season). Families were able to get right in the dirt, and children were exposed to components of nature that might otherwise be thought of as “unclean” or “gross” (Figure 4.4).
Physical Literacy	The actions and activities planned for each day inherently get kids and parents/guardians active. For example, families who participated in the first day were using different gardening tools, as well as their hands to dig in the soil. The actions involved in gardening essentially allow participants to move and develop their motor skills.
Play Based Pedagogy	The organization of activities for each day allowed for play-based pedagogical approaches to be incorporated. As another example, when tilling and preparing the soil, children were both taught the importance of tilling the soil, and were then able to till it themselves for a period of time. The actions of tilling the soil soon turned into an unstructured play time, as children began to find different organisms and plants embedded in the layers underneath the surface. A balance of play and structured teaching were incorporated into the program activities, successfully incorporating play-based pedagogies into the structure.



**Figure 4.4.** Child holding a worm she found while digging through the dirt at the first Community Garden Program Session, March 2018.

## 4.3 Program Itinerary

The itinerary for each session is structured in a way that promotes learning and provides adequate rest times for children and their parents. Adequate time was allocated for activities, placement of free time to allow everyone breathing room and rest from new knowledge, and a warm-up activity to bring everyone's energy levels up (or in the case of children that are overly energetic, have them release some of the excess). In this way, the program itinerary inherently incorporated physical literacy and pedagogical approaches in an outdoor setting. The itinerary focused on the topics and themes for each session. It serves as an outline illustrating how the program would chronologically progress in terms of themes and how the sessions would relate to each other in terms of knowledge, skill, and conceptual development.

## 4.4 Lesson Plan Development

Lesson plans (Appendix D) were designed to provide a detailed description of the learning direction - similar to a timeline with instruction if you will. Thus, it was imperative that the program itinerary was established first to properly design each day's activity to correspond with the projected learning goals as the program progressed. Activities were inspired by various groups who have conducted similar programs or with similar interests in mind (O'Rourke, 2017; Wiseman, 2014). With the age group of participants projected to range from ages 0-6 years old, it was critical to think about how a child may receive the information provided or react to how the activity was presented. Young children tend to learn through play, through actions they take on themselves. Teaching information is limited in the sense that children have shorter attention spans, and therefore require hands-on activities to maintain focus and interest. And lastly, children can only focus for so long without having to take intermittent breaks in between. These two factors define which activities may be deemed appropriate and inappropriate for our program.

### 4.4.1 Program Challenges

When working with young families, there are two important issues to consider as a program with this specific audience is being developed. One being the way young children

interpret and retain new information and secondly, their natural behaviours. By working towards addressing these topics, we are able to create a program that elicits a more positive response by the children and their parents/guardians.

One of the issues we faced was the realization that our lesson plan was overly-structured. Activities had to be simplified in such a way that focused on the key actions and purpose of those actions. As a result, most of the information we were interested in conveying had to be addressed mainly through demonstrations and allowing the children to interpret the information their own way, through free play. For example, during our first session of the program, we had a garden bed preparation activity. Rather than showing how to till the soil 'properly', we found it was best to simply introduce the tools we may use for the task, and let the children decide how to complete the task at hand. If the child was hesitant or lost, then we may step in and model some of the ways tilling may be completed. Thus, it was through this learning experience that we were able to apply the theory of play-based pedagogy in a real-time environment.

Secondly, we faced the challenge of child behaviour. As we ran the program session, we noticed at certain points, the children were losing focus or needed a break from the activities. Upon reflection, the originally planned 2-hour session was too long in duration and didn't allow enough break time in between each activity. These factors may have contributed to the lack of concentration, off-task behaviour, restlessness, and/or deficit in energy seen in all the child participants at some point during the program session. Thus, by being able to use the first session as a learning experience and as a way to become familiar with the families that will be attending our program, we can cater the program structure to fit the needs of those attending the sessions. It is through these challenges that we may develop a lesson plan that is both realistic, and suitable for those it is intended for.



# Conclusion

With the goals of understanding and fostering connections between families in the Cambie-Riley Park neighbourhood, we have successfully created and implemented a PLANE program that can be facilitated by Little Mountain Neighbourhood House in future years. Through questionnaires, interviews and discussions with families in the area, we created a program that reflects the concerns, needs and voices of the community with regards to nature, interpersonal development gardening and interpersonal engagement.

# Acknowledgements

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# Appendices

## Appendix A - Adult questionnaire & Methodology

### **METHODOLOGY:**

1. On the day of the questionnaire, program coordinators will hand out the questionnaire packages (with consent forms for the parent/guardian, and child attached) to the program participants at the beginning of the program. The coordinators will state that if the parent/guardian is interested in taking the questionnaire, they should fill out the appropriate consent form. As well, if they would be interested in allowing their child (aged 4-6 years old) to be interviewed, they must fill out the corresponding child consent form.
2. Attention will be brought to the form 'consent for further contact.' Program coordinators will explain that, if they are interested, parent/guardians who take the questionnaire are all invited to participate in a focus group study regarding family nature interactions. This focus group will further expand on their answers to the questionnaire, and invites them to share their own experiences in full, they will be directed to this consent for further contact option in their consent form.
3. The questionnaire can be completed by participants during their break time, or, if more time is needed, at the end of the program session. The questionnaire should take a maximum of 8 minutes. The researchers will collect the questionnaires and consent forms upon arrival at the break or end of the program session. Those who have consented to be contacted and who have accepted the invitation regarding the focus group will be provided information regarding the focus group session.

## QUESTIONNAIRE TEMPLATE:

Little Mountain Neighbourhood House  
Questionnaire ID: \_\_\_\_\_

Date: \_\_\_\_\_

Program Name: \_\_\_\_\_ Time: Break time / after program (circle 1)

### **Parent/Guardian Questionnaire**

**1. Do you enjoy spending time outdoors? Y / N**

**Why/why not?**

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**2. How important do you believe it is to spend time outdoors? (Circle one)**

Not important

Somewhat Important

Important

Very Important

**Why?**

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**3. On average, how many hours a day do you personally spend outdoors? (Circle one)**

**during the summer (June - September)?**

<1 hour/day

1-2 hours/day

3-4 hours/day

>4 hours/day

Other \_\_\_\_\_

**in the off-season (October - May)?**

<1 hour/day

1-2 hours/day

3-4 hours/day

>4 hours/day

Other \_\_\_\_\_

**5. Are you satisfied with how much time you personally spend outdoors?**

**Y / N**

**Why/Why not?**

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Comments: \_\_\_\_\_

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**6. On average, how many hours a day do you spend outdoors with your child? (Circle one)  
in the summer (June - September)?**

<1 hour/day                  1-2 hours/day                  3-4 hours/day                  >4 hours/day

Other \_\_\_\_\_

**in the off-season (October - May)?**

<1 hour/day                  1-2 hours/day                  3-4 hours/day                  >4 hours/day

Other \_\_\_\_\_

**8. Are you satisfied with how much time you spend outdoors with your child? Y / N**

**Why/Why not?**

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Comments: \_\_\_\_\_

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**9. Would you want to increase your time spent in outdoors with your child? Y / N**

**a. Why or why not?**

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**b. If YES, what are the most challenging aspects of doing so?**

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**10. What outdoor activities do you personally partake in? (Check all that apply & add other activities)**

applicable)

☐ Recreational Sports      ☐ Gardening      ☐ \_\_\_\_\_  
*specify* \_\_\_\_\_

☐ Biking      ☐ Running      ☐ \_\_\_\_\_

☐ Walking      ☐ \_\_\_\_\_      ☐ \_\_\_\_\_

**11. Why do you partake in the activity/activities in Question 10?**

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**12. What sorts of outdoor activities do you partake in WITH your child?**

(Check all that apply & add other activities applicable)

☐ Playing      ☐ Recreational Sports      ☐ \_\_\_\_\_  
*specify* \_\_\_\_\_

☐ Walking      ☐ Biking      ☐ \_\_\_\_\_

☐ Gardening      ☐ \_\_\_\_\_      ☐ \_\_\_\_\_

**13. If you had time and resources available, what other outdoor activities would you partake in on your own?**

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**with your child?**

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**14. Have you grown your own food before?    YES    /    NO**

**a. If YES, do you currently grow your own food?                      YES    /    NO**

**If you do not currently grow food anymore, why?**

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b. If NO, are you interested in growing your own food / gardening? YES / NO

15. What appeals to you most with gardening?

\_\_\_\_ Growing food in your own backyard

\_\_\_\_ Growing food in a community garden

\_\_\_\_ Volunteering at an urban garden / farm such as UBC Farm

\_\_\_\_ Other: \_\_\_\_\_

## Appendix B- Child Interview & Methodology

### **METHODOLOGY:**

1. The parent/guardian will have been provided with a second consent form by the program coordinators in the original questionnaire package. The consent form is for the child's interview, which is restricted to children aged 4-6 years old. Completed Child consent forms should be kept with the parents until their child is ready to be interviewed by the researchers. Once the child is ready to be interviewed and their parent/guardian has signed the consent form, the child will bring the completed consent form to the researchers.
2. The consented child will then be asked by the researcher if he/she would like to answer a few questions via Letter of Assent.
3. The consented child will be interviewed by one of the researchers using the interview outline (attached) and the researcher will note the child's answers in the outline.
4. The researchers will collect the consent form from the program coordinators after the interviews.

## CHILD INTERVIEW TEMPLATE:

Date: \_\_\_\_\_

Name of notetaker: \_\_\_\_\_

Program Name: \_\_\_\_\_ Time: Break time / after program (circle 1)

### Child Interview

Introduce yourself, get acquainted. Child should be over 4 years old.

1. Do you like spending time outside? Y / N

a) Do you like spending time outside when it's warm and sunny?

b) How about when it is a little cold, cloudy or rainy?

2 a) Give the scenario:

*"Imagine you and your mom/dad/ (state caretaker) are going to take you on an outdoor adventure of your choice - (e.g. go to a park, forest, farm, playground) They say that you can choose what to do first. You can pick anything! - What would you choose?"*

b) What do you like about being outdoors?

"For example you can: play outside / play on the playground, play sports - (soccer/baseball), go for a bike ride, climb trees, building a fort, look for bugs, pick flowers etc..."

Answer:

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3. Interactions: inform the child to take an item from inside the paper bag you are holding (it will contain nature items [pinecone / leaf / a seed])

What do you like most about \_\_\_\_\_ [state item chosen]? (*Is it the texture/colour/does it remind you of anything?*)

Answer:

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## Appendix C- Focus Group Discussion Questions

### **METHODOLOGY:**

1. Parents/guardians who have consented to be contacted for the focus group session will be invited to focus group session two weeks after the questionnaire period. During this time, researchers will mention that meal compensation and child-minding will be available for those who will be participating. Only one focus group session will be held. Out of all the parents/guardians who have confirmed their attendance, twenty will be randomly selected to participate in the session.
2. Before beginning the focus group, the researchers will be briefing the participants of the process of focus group as well as ask the participants to sign another consent form.
3. The focus group discussion will be initiated with questions that will be discussed for maximum of 1.5 hours with the researchers taking notes of the important points made by the participants as well as keeping the topic of discussion on track.

## FOCUS GROUP DISCUSSION TEMPLATE:

**Goal:** To understand the community's behaviour - feelings from previous experiences, perception for future activity, reasons behind actions - towards outdoors and community garden

Question Format:

**Goal:** *(data collected)*

*Baseline Question*

**Challenges:** *(further context)*

In the initial questionnaire we conducted with you, many of you responded that you enjoy doing \_\_\_\_\_ outdoors with your children, however were limited by \_\_\_\_\_. Does anybody have anything they wish to add to this statement?

**Feelings from previous experience:** *(positive or negative feeling)*

Think about an experience you had from an outdoor activity and describe to us how it made you feel.

**Perception for future activity:** *(yes or no + "reasons")*

Do you believe it is important for your family to connect with nature and why.

**Reasons behind actions:** *(trends from answers ie recreational, job-specific)*

What motivated you to do your past and present outdoor activities?

**What about a family nature program in your community would appeal to you the most?**

**Garden:** *(information for program development of Community Garden)*

*How many of you have gardened before or currently have a garden of your own?*

*For those of you who have or have had a garden, do your children help you out in the garden?  
What encourages them to help you?*

*For those of you who have never gardened before, what interests you about it?*

*What is the most challenging or daunting aspect about a community garden?*

*What would make it easier? (e.g. a weekly program, a bi weekly program, more accessible parks?)*

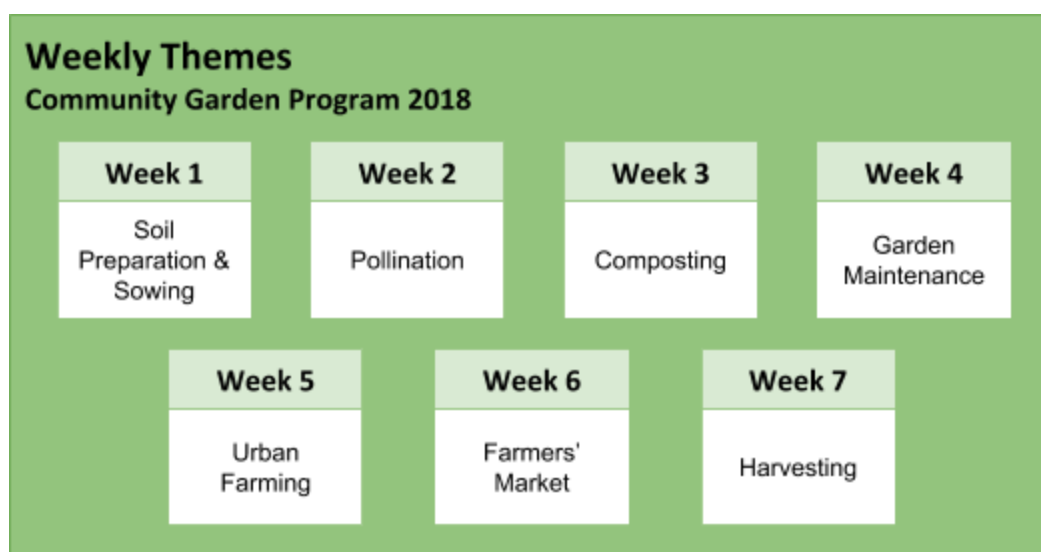
*What would you be most interested in learning if there was to be a community gardening program? (e.g. composting, choosing plants, meeting other families, going to an actual farm?)*

## Appendix D- Community Garden Program 2018

### COMMUNITY GARDEN RATIONALE:

Nature exploration plays significant roles in the development of young children, both mentally and physically. It is through experiences in the outdoors that children can develop three major skills. Firstly, children can develop their motor skills, known as physical literacy, by practicing motions and actions naturally in a dynamic setting such as the outdoors. They may develop a personal connection to nature, which may lead to their mental wellness and a strong sense of conservation of the natural world. And lastly, the development of strong parent-child and people bonds. The use of an open space such as the outdoors enables us to make meaningful connections to our everyday lives, ourselves, and to those around us—living or non-living.

In collaboration with Little Mountain Neighbourhood House, we developed a community garden-based program that will run once a week, for a total of 7 weeks during early spring. The program aims to encourage the development of the three major skills through concepts related to food production and the processes that everyday life relies on. The design of the program will provide a basis for a relationship and respect with the natural world; connections to the ecosystem and community established through the various applications of food production and a sense of understanding that promotes the sustainability of these new-found skills and knowledge.



## Daily Lesson Plan (Session 1: Saturday March 10)

Developed for: Little Mountain Neighbourhood House

Developed by: Celine, Camille, Jenny

**Unit Name:** Seeding and Gardening Preparation

**Starting Location:** Riley Park Community Garden

**Total Duration of Session:** 1 hour

### Overview

- Go over introductions (program, and participants)
- Review gardening basics
- Soil preparations
- Free time + Snack time
- Label Creation & Seeds Activity
- Seeding and Labeling
- Reflection

### Goals of Session

<b>Goal #1:</b> To ensure all participants have the same level of basic gardening knowledge and skill	<b>Goal #2:</b> Generate interest, motivation and a curiosity for gardening and mother nature	<b>Goal #3:</b> To familiarize participants with the beginning process of gardening (i.e. steps after soil preparation)	<b>Goal #4:</b> For participants to anticipate the development the overall garden post-planting
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### Activity 1: Introductions

**Duration of Activity:** 10 mins

#### Activity Description:

The facilitators will introduce themselves and the program. Parents parents and children will have the opportunity to introduce themselves by providing an answer to a question.

Procedure	Materials
1) Gather everyone in a circle, facilitators included.	- N/a

<p>2) Parents and children will introduce themselves one by one.</p> <p>3) Everyone will gather in a circle and take turns introducing themselves until everyone in the circle has had a chance to speak.</p> <p><b>i. If a parent is answering:</b> they will state their name and why they were interested in joining the program</p> <p><b>ii. If a child is answering:</b> they will state their name and one thing they are the most excited for in the program.</p>	
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## Activity 2: Gardening Skills 101

**Duration of Activity:** 10 mins

### Activity Description:

An introduction of various gardening tools, techniques, and types of plants that one may encounter in their gardens/nature in general. The activity will be lecture-based with demonstrations and examples, balanced with free time to allow for questions.

Procedure	Materials
<p>1) Gather everyone in an open space.</p> <p>2) Introduce various equipment:</p> <ul style="list-style-type: none"> <li>- Lay the equipment down in rows.</li> <li>- Have everyone gather around and discuss each piece of equipment one by one.</li> <li>- Begin by allowing everyone time to feel/hold/touch the equipment, as well as develop their own personal guess as to what it may be.</li> <li>- After ~10 mins, distribute everyone to a garden tool. Have them demonstrate how they think the tool should be used, and state their guess what it is used for.</li> </ul>	<ul style="list-style-type: none"> <li>- Various gardening tools (hoe, rake, spade, trowel, garden claw, shovels, watering cans)</li> <li>- Pictures of weeds and cover crops.</li> </ul>



<ul style="list-style-type: none"> <li>- Facilitator to pick up the tool and demonstrate the motions to use them in.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Hoe:</b> Great for weeding, covering seeds and chopping up the soil.</li> <li><input type="checkbox"/> <b>Rake:</b> Used to prepare the seedbed and to break-up large clods of soil.</li> <li><input type="checkbox"/> <b>Spade:</b> Used to dig up the garden in preparation for planting and for adding organic matter to the soil.</li> <li><input type="checkbox"/> <b>Trowel:</b> Used for digging holes for transplants and breaking up the soil around the plants.</li> <li><input type="checkbox"/> <b>Garden Claw:</b> Used to loosen, aerate, and weed the soil.</li> <li><input type="checkbox"/> <b>Watering Can:</b> Used to water in seeds and transplants.</li> <li><input type="checkbox"/> <b>Hands:</b> Multi-purpose tool, can be as a substitute for the tools above! (in appropriate situations).</li> </ul>	
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<b>Activity 3: Soil Preparation</b> <b>Duration of Activity:</b> 15 mins	
<b>Activity Description:</b> Before starting the activity, make sure to state which plot we will be working with for the rest of the program (and this one is the one we will be tending to only). The activity will be hands-on, allowing the participants to apply their newly found knowledge in identifying (and removing) the appropriate plants. And also how to turn-over the soil through the use of various tools and techniques.	
Procedure	Materials
1) Providing the option of wearing gloves, instruct participants to identify	<ul style="list-style-type: none"> <li>- Shovels</li> <li>- Garden claw</li> </ul>

<p>potential weed and remove. If there are more people present then there are weeds, have those who are unable to weed till the soil in the next step.</p> <p>2) Have participants till the soil by using a garden claw, spade, garden fork or handheld shovels.</p> <p>3) Note: During each step, try to discuss the positives and negatives of weeding and loosening the soil (i.e. why do we take out weeds, why do we till the soil?).</p>	<ul style="list-style-type: none"> <li>- Hoe</li> <li>- Rake</li> <li>- Spade</li> <li>- Gardening gloves.</li> </ul>
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### Suggested Questions: (and some suggested answers)

*Allow participants some time to think the question over, and do not outright correct them if their answer is incorrect. Try to discuss why or why not without simply stating the answer.*

- 1) Why is soil important? In gardening, our daily lives, and/ or the natural environment?  
**A:** It is what plants grow in, helps catch all the water that comes from rain, etc., and is home to many living things!
- 2) What does soil feel like when it is wet or dry? Why?  
**A:** Wet =Sticky, Dry = Crumbly
- 3) Why do you think the soil is this particular colour?  
**A:** (Dark = high in organic matter (i.e. plants, animals, etc), or also just wet, Light = low in organic matter, or dry)

### Activity 4: Free time & Snack time

**Duration of Activity:** 15 mins

#### Activity Description:

Families will be given time to interact with their children, or with others in an outdoor setting, have a small break, and/or explore the rest of the garden.

Procedure	Materials
<p>1) Dismiss the families for break.  Encourage nature exploration and/or interactions with others.</p>	<ul style="list-style-type: none"> <li>- N/a</li> </ul>

## Activity 5: Labeling & Identifying Seeds Game

**Duration of Activity:** 15 mins (Labelling: 5 mins, Matching Game: 10 mins)

### Activity Description:

Participants will be creating labels for the plots. As well, playing a matching game which requires them to pair the correct seed to mature plant picture.

Procedure	Materials
<p><i>Part A: Labelling</i></p> <ol style="list-style-type: none"> <li>1) Divide participants into groups consisting of 2 families each (5 groups of 2 families).</li> <li>2) Each group will receive 2 stakes to label using markers (Note: the 2 stakes are being labeled for the same plant) .</li> </ol>	<p><i>Part A:</i></p> <ul style="list-style-type: none"> <li>- Stakes</li> <li>- Markers</li> </ul>
<p><i>Part B: Matching Game</i></p> <ol style="list-style-type: none"> <li>1) Set-up: Lay out the bags and pictures.</li> <li>2) Remaining the the same teams as in <i>Part A</i>, have families try to match the seeds to their corresponding juvenile and mature picture by placing them side by side.</li> <li>3) If correct, the game is finished.</li> <li>4) If incorrect, tell them how many are incorrect, but not indicating which ones are incorrect.</li> </ol> <p><b>Note:</b> If teams are having difficulty, try to give hints:</p> <ul style="list-style-type: none"> <li>- E.g. If the seed is this shape (size) then the plant might mimic those traits.</li> </ul>	<p><i>Part B:</i></p> <p><b>One set (for one team)</b></p> <ul style="list-style-type: none"> <li>- <b>5 small bags</b> (each filled with one type of seed)</li> <li>- <b>5 pictures</b> of juvenile plants corresponding to the seeds</li> <li>- <b>5 pictures</b> of matured plants corresponding to the seeds</li> </ul> <p><b>Total (for 5 groups)</b></p> <ul style="list-style-type: none"> <li>- <b>25 small bags</b> (5 of kale seeds, 5 of arugula seeds, 5 of spinach seeds, 5 of radish seeds, 5 of snap pea seeds)</li> <li>- <b>25 pictures</b> (5 of each juvenile plant)</li> <li>- <b>25 pictures</b> (5 of each matured plant)</li> </ul>

## Activity 5: Seeding

**Duration of Activity:** 15 mins

### Activity Description:

Participants will be seeding and labeling the plot with the stakes. Throughout the activity, try to engage with the families by encouraging conversation around why we do things the way we

do. As a reminder, try to let families think about the question first, provide some keywords/ideas to help lead to the answer.

Procedure	Materials
<ol style="list-style-type: none"> <li>1) In the same teams as Activity 2, each team will receive the of seeds corresponding to the stake they made to label their section. (Each team will have 2 stakes for the same plant).</li> <li>2) Before planting, discuss (as one entire group, or within the teams of two) how to go about seeding. <b>Have everyone share their method first.</b></li> </ol>	<ul style="list-style-type: none"> <li>- Labelled stakes from previous activity (#2)</li> <li>- Germination, planting information and/or instructions for all the types of seeds,</li> <li>- Seeds: Radish (French Breakfast, White Radish, Black Radish, Mini Red Radish), Kale (Lacinato &amp; Red Russian, Ethiopian kale), Peas (Sugar Pod, Parsley Pea), Pac Choi White Stem, Arugula, Spinach</li> </ul>
Suggested Questions: (and some suggested answers)	
<ol style="list-style-type: none"> <li>1) What are some factors that you should consider when seeding?  <b>A:</b> (i) Spacing: think about how big the plant might be later.  (ii) Depth of the seed when planted in the soil: infer how the plant is expected to reach the surface.</li> <li>2) Knowing this, what is something you can follow?  <b>A:</b> (i) A pattern (think about baking cookies→ we do the same thing).  (ii) In general, plant based on size of the seed (at a depth of 2x the width of the seed) → using you fingers as a reference and to make the hole is a good method!</li> <li>3) Which is more important for growing plants, spacing of seeds or depth of which they are planted?  <b>A:</b> Depth! (If too shallow, seeds will dry out and not grow. But if too deep, plants will run out of energy before reaching sunlight).</li> </ol>	

### Activity 6: Reflection (*Suggested For Older Age Group*)

**Duration of Activity:** 20 mins

#### Activity Description:

For this activity, have the participants create a journal entry that includes:

- i. A drawn picture predicting what a seed will look like in 2, 4, 6 weeks time.

- ii. A journal entry that summarizes what happened during the day (concepts, skills, activities)
- iii. A/few sentences stating what did they enjoy the most about today, what was the most memorable thing?

Procedure	Materials
<ol style="list-style-type: none"> <li>1) Have everyone regroup in front of the facilitators and a flipchart.</li> <li>2) On the flip chart, have the elements of a journal listed out: <ul style="list-style-type: none"> <li>- A drawn picture predicting what a seed will look like in 2, 4, 6 weeks time</li> <li>- A journal entry of today's activities</li> <li>- A/few sentence(s) stating what did they enjoy the most today, what was the most memorable thing?</li> </ul> </li> <li>3) Announce to the participants that the next activity is a reflection/journal piece. State the elements that are to be done (as listed on the flip chart). This is to be done in parent/child groups.</li> <li>4) Indicate the materials that may used to complete the piece (show where these materials are).</li> <li>5) Allow families to work on the journals for ~20 mins (shorten if families complete the activity earlier).</li> <li>6) Collect the journal entries from everyone and store it in a folder.</li> <li>7) <b>Optional:</b> If time permits, gather everyone in a circle and quickly state one thing they didn't know how to do/know before today's session.</li> </ol>	<ul style="list-style-type: none"> <li>- Papers</li> <li>- Pens</li> <li>- Pencil Crayons</li> <li>- Markers</li> <li>- Template: <a href="#">[insert link]</a></li> </ul>

## Daily Lesson Plan (Session 2: Saturday March 17)

Developed for: Little Mountain Neighbourhood House

Developed by: Celine, Camille, Jenny

**Unit Name:** Pollination Workshop (*Field Trip - UBC Farms*)

**Starting Location:** LMNH

**Total Duration of Session:** ~3 hours

**Contact:** UBC Farms, *FarmWonders Field Trips* ([ubcfarm.farmwonders@ubc.ca](mailto:ubcfarm.farmwonders@ubc.ca))

### Overview

- Transit to UBC Farms
- UBC Farm Wonders Tour - Seeds
- Return trip

### Goals of Session

**Goal #1:**

To expose families to areas outside their local community.

**Goal #2:**

To expose families to areas where gardening occurs on a larger scale.

### Activity 1: Travel to UBC Farms

**Duration of Activity:** ~50 mins

Procedure	Materials
<b>Procedure</b> 1) Everyone to meet at LMNH and take transit together to UBC Farms.	- N/a

### Activity 2: UBC Farm Wonders Tour-Pollination

**Duration of Activity:** ~1 hour

**Activity Description:**

Participants will take part in a UBC Farm led tour focused on the topic of seeds.

### Objective

Understand the important role of pollination in food production and plant growth	
<b>Participants Will be Able to:</b>	
Observe bee hives and learn bee etiquette.	Understand and perform the natural movement of bees

<b>Activity 3: Return to LMNH</b> <b>Duration of Activity: ~ 50mins</b>	
<b>Procedure</b>	<b>Materials</b>
1) Everyone returns to LMNH via transit.	- N/a

## Daily Lesson Plan (Session 3: Saturday March 24)

Developed for: Little Mountain Neighbourhood House

Developed by: Celine, Camille, Jenny

**Unit Name:** Composting 101

**Starting Location:** Riley Park Community Garden

**Total Duration of Session:** 1 hour

**Contact:** Angela Hoy, *Master Composter* (angela.hoy@sky.com)

### Overview

- Introduction to Composting (With Angela - Seed to Sky Garden Club)
- Let's Build a Micro-Composter
- Free Time & Snack Time
- Reflection

### Goals of Session

**Goal #1:**

To introduce the broad process of composting (and with the addition of worms).

**Goal #2:**

Identify what is and is not appropriate for composting.

### Activity 1: Composting 101 - Introduction

**Duration of Activity:** ~15 mins

**Activity Description:**

An introduction to composting will be led by a Seed to Garden volunteer, Angela Hoy.

Procedure	Materials
1) Angela will go over the concept of composting, materials that are compostable, and the forms of composting.	<ul style="list-style-type: none"><li>- Composting Colouring Worksheet (Brown &amp; Green Material)</li><li>- Colouring Utensils</li></ul>



## Activity 2: Let's Build a Micro-Composter!

**Duration of Activity:** 20 mins

### Activity Description:

Participants will build their own micro-composter from materials they collect in the Riley Park area.

Procedure	Materials
<ol style="list-style-type: none"><li>1) Have everyone collect compostable materials around Riley Park.</li><li>2) Remove label and rinse soda bottle. Have parents cut the top of the bottle.</li><li>3) Add a handful of soil to the bottle, then a hand full of compostable material.</li><li>4) Repeat step 2 until bottle is filled. Last layer on top must be a soil layer.</li><li>5) Spray top layer with water until damp.</li><li>6) Notify participants to keep the bottle in a sunny spot and when top soil is dry, to re-dampen the layer with water.</li><li>7) Remind families to observe the container over the course of 8 weeks, where the compost layers will slowly decompose into something that looks like soil.</li></ol>	<ul style="list-style-type: none"><li>- Clean recyclable soda bottles (or see through containers)</li><li>- Compostable materials (brown and green)</li><li>- Soil</li><li>- Spray bottle</li><li>- Scissors</li></ul>

## Activity 3: Free Time & Snack Time

**Duration of Activity:** 30 mins

### Activity Description:

Families will be given time to interact with their children, or with others in an outdoor setting, have a small break, and/or explore the rest of the garden.

Procedure	Materials
<ol style="list-style-type: none"><li>1) Dismiss families for break.</li><li>2) Encourage nature exploration and/or interactions with others.</li></ol>	<ul style="list-style-type: none"><li>- N/a</li></ul>

#### **Activity 4: Reflection (*Suggested For Older Age Group*)**

**Duration of Activity:** 25 mins

##### **Activity Description:**

For this activity, have the participants create a journal entry that includes:

- i. A drawn picture of any plant in the garden/park
- ii. A journal entry that summarizes what happened during the day (concepts, skills, activities)
- iii. A/few sentences stating what did they enjoy the most about today, what was the most memorable thing?

Procedure	Materials
<ol style="list-style-type: none"><li>1) Have everyone regroup in front of the facilitators and a flipchart.</li><li>2) On the flip chart, have the elements of a journal listed out:<ul style="list-style-type: none"><li>- A drawn picture of one of the plants in garden/park</li><li>- A journal entry of today's activities</li><li>- A/few sentence(s) stating what did they enjoy the most today, what was the most memorable thing?</li></ul></li><li>3) Announce to the participants that the next activity is a reflection/journal piece. State the elements that are to be done (as listed on the flip chart). This is to be done in parent/child groups.</li><li>4) Indicate the materials that may used to complete the piece (show where these materials are).</li><li>5) Allow families to work on the journals for ~20 mins (shorten if families complete the activity earlier).</li><li>6) Collect the journal entries from everyone and store it in a folder.</li><li>7) <b>Optional:</b> If time permits, gather everyone in a circle and quickly state</li></ol>	<ul style="list-style-type: none"><li>- Papers</li><li>- Pens</li><li>- Pencil crayons</li><li>- Markers</li></ul>

one thing they didn't know how to do/know before today's session.	
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## Daily Lesson Plan (Session 4: Saturday April 7)

Developed for: Little Mountain Neighbourhood House

Developed by: Celine, Camille, Jenny

**Unit Name:** Garden Maintenance 101

**Starting Location:** Riley Park Community Garden

**Total Duration of Session:** 1 hour

### Overview

- Review Activity: Telephone Pictionary
- Gardening Maintenance Stations
- Free Time & Snack Time
- Reflection

### Goals of Session

**Goal #1:**

To identify and understand what a garden requires to maintain itself.

**Goal #2:**

To discover how the garden itself is a key component in the lives of other living or non-living things.

### Suggested Questions:

- What makes up a garden? What significance/role do these elements have in the garden?
- What does a garden need to survive?
- What other living or non-living things may rely on the garden and how so?

### Activity 1(a): Telephone Pictionary (*Suggested For Older Age Group*)

**Duration of Activity:** 15 min

#### Activity Description

Participants will play a variation of the game "Telephone", which includes a pictionary component. The game will focus on identifying one gardening related actions and/or concepts through the use of statements and pictures!

Procedure	Materials
1) A sheet of paper with a different	- Paper

<p>sentence on the top (i.e. somebody gardening) is given to one person. The participant must draw a picture representing that sentence.</p> <p>2) The paper is then folded so the sentence is covered, leaving only the picture visible.</p> <p>3) It is passed to the next person and they must write a sentence that the picture is about.</p> <p>4) Paper is folded to conceal the drawing, and repeated until the paper reaches the owner.</p>	<ul style="list-style-type: none"> <li>- Markers</li> <li>- Pencil crayons</li> </ul>
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### **Activity 1(b): Pictionary Debriefing (*Suggested for Older Age Group*)**

**Duration of Activity:** 10 mins

#### **Activity Description**

Everyone will share the progression of their papers, and discuss why we might see a difference.

<b>Procedure</b>	<b>Materials</b>
<p>1) After the game is complete, have each participant show how their paper changed after each swap.</p> <p>2) (<b>Note:</b> Try to touch base on that fact how “gardening” encompasses different responsibilities and ideas, doesn’t mean one thing).</p> <p>3) Introduce the idea of garden maintenance.</p> <p>4) (<b>Note:</b> Relate how maintenance is a form of gardening).</p>	<ul style="list-style-type: none"> <li>- Completed pictionary papers</li> </ul>

## Activity 2: What Does a Plant Need to Grow?

**Duration of Activity:** 15 mins

### Activity Description

Participants will review the different elements plants require to grow by filling in a colouring sheet.

Procedure	Materials
<ol style="list-style-type: none"><li>1) Hand out gardening sheet.</li><li>2) Discuss the elements on the sheet and what they do for the plant.</li><li>3) Colouring time.</li></ol>	<ul style="list-style-type: none"><li>- Garden resources colouring sheet</li><li>- Colouring supplies</li></ul>

## Activity 3: Gardening Maintenance Stations

**Duration of Activity:** 15 mins

### Activity Description:

Participant will visit three stations that each focus on a different factor (i.e. water, weeding, fertilizer/compost). Each station will have a task to be done to the actual garden plot and/or an activity to examine the impact of these factors on garden maintenance.

Procedure	Materials
<p><b>Watering Experiment:</b> Each family will have a set of 3 bowls, but will share watering can(s), and spray bottle(s).</p> <ol style="list-style-type: none"><li>1) Add the same amount of oatmeal between 3 bowls. Mention that the oatmeal represents the 'soil' plants live in. (<b>Note:</b> Each family will have a set of three bowls).</li><li>2) <b>Bowl 1: The Dry Soil</b><ul style="list-style-type: none"><li>- Oatmeal will be left dry.</li><li>- Have participants feel the dryness of the oatmeal.</li><li>- Explain this is how soil would feel when it is too dry for the plants. Therefore, it should be watered.</li></ul></li></ol>	<ul style="list-style-type: none"><li>- 3 bowls</li><li>- Rolled oats</li><li>- Container of water (i.e. watering can or a cup)</li></ul>

<p>3) <b>Bowl 2:</b> The Overwatered Soil</p> <ul style="list-style-type: none"> <li>- Have the children use the watering can to pour water into the bowl, until the oatmeal is covered.</li> <li>- Discuss how this is an example of the soil being too wet and “over watered.”</li> <li>- Mention one sign of overwatering are floating bits on the top of your “soil.”</li> <li>- Make sure to have the kids feel the texture of the oatmeal as well, and compare that feeling to the dry “soil” in bowl</li> </ul> <p>4) <b>Bowl 3:</b> The Properly Watered Soil</p> <ul style="list-style-type: none"> <li>- Have the children mist the oatmeal until slightly wet, or use the watering can.</li> <li>- Have them touch the oatmeal and discuss the texture (i.e. how it is “sticky” rather than “dusty” like in bowl 1, or “floating” like in bowl 2).</li> <li>- This is how properly watered soil is suppose to feel like.</li> </ul> <p>5) Moving back to the plot, have families “properly” water one portion of the plot; reminding them to keep in mind of the tips from the bowls (i.e. avoid floating, look for sticky texture).</p>	
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### Activity 3: Free Time & Snack Time

**Duration of Activity:** 20 mins

#### Activity Description:

Families will be given time to interact with their children, or with others in an outdoor setting, have a small break, and/or explore the rest of the garden.

Procedure	Materials
<ol style="list-style-type: none"><li>1) Dismiss the families for break.</li><li>2) Encourage nature exploration and/or interactions with others.</li></ol>	<ul style="list-style-type: none"><li>- N/a</li></ul>

### Activity 4: Reflection (*Suggested For Older Age Group*)

**Duration of Activity:** 25 mins

#### Activity Description:

For this activity, have the participants create a journal entry that includes:

- i. A drawn picture of one of the plant in the garden
- ii. A journal entry that summarizes what happened during the day (concepts, skills, activities)
- iii. A/few sentences stating what did they enjoy the most about today, what was the most memorable thing?

Procedure	Materials
<ol style="list-style-type: none"><li>1) Have everyone regroup in front of the facilitators and a flipchart.</li><li>2) On the flip chart, have the elements of a journal listed out:<ul style="list-style-type: none"><li>- A drawn picture of one of the plants in the garden</li><li>- A journal entry of today's activities</li><li>- A/few sentence(s) stating what did they enjoy the most today, what was the most memorable thing?</li></ul></li><li>3) Announce to the participants that the next activity is a reflection/journal piece. State the elements that are to be done (as listed on the flip chart).</li></ol>	<ul style="list-style-type: none"><li>- Papers</li><li>- Pens</li><li>- Pencil crayons</li><li>- Markers</li></ul>



<p>This is to be done in parent/child groups.</p> <p>4) Indicate the materials that may used to complete the piece (show where these materials are).</p> <p>5) Allow families to work on the journals for ~20 mins (shorten if families complete the activity earlier).</p> <p>6) Collect the journal entries from everyone and store it in a folder.</p> <p>7) <b>Optional:</b> If time permits, gather everyone in a circle and quickly state one thing they didn't know how to do/know before today's session.</p>	
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## Daily Lesson Plan (Session 5: Saturday April 14)

Developed for: Little Mountain Neighbourhood House

Developed by: Celine, Camille, Jenny

**Unit Name:** Food Production (**Field Trip** - Fresh Roots)

**Starting Location:** LMNH

**\*Field Trip Location:** David Thompson Secondary

**Total Duration of Session:** 2.5-3 hours

**Contact:** Fresh Roots, *Urban Farming Society* (<http://freshroots.ca/education/field-trips/>)

### Overview

- Transit to Fresh Roots Location
- Gardening Workshop (led by Fresh Roots)
- Transit back to LMNH

### Goals for Session

**Goal #1:**

To expose families to areas outside their local community.

**Goal #2:**

To expose families to areas where gardening occurs on a larger scale.

### Activity 1: Travel to Fresh Roots Location

**Duration of Activity:** 50-60 mins

Procedure	Materials
1) Everyone to meet at LMNH (9:30 AM) and take transit together to Vancouver Technical Secondary School.	- N/a

### Activity 2: Fresh Roots Workshop

**Duration of Activity:** ~1.5 hrs

#### Activity Description

Participants will take part in a UBC Farm led tour focused on the topic of seeds, harvesting, and large scale urban farming.

Objective	
For participants to connect the different concepts we learnt throughout the program (i.e. how to seed a new plot after mixing the soil first).	
Procedure	Materials
<ol style="list-style-type: none"> <li>1) The Fresh Roots group will start with introductions and orientation of the farm.</li> <li>2) Children will split up and explore the activity stations:               <ol style="list-style-type: none"> <li>(a) Seeding</li> <li>(b) Digging</li> <li>(c) Scavenger hunt around the farm for signs of spring</li> </ol> </li> <li>3) Everyone will regroup to create their own salads from produce on the farm.</li> <li>4) Closing circle time.</li> </ol>	

<b>Activity 3: Return to LMNH</b> Duration of Activity: ~50-60 mins	
Procedure	Materials
1) Return trip back to LMNH.	-N/a

## Daily Lesson Plan (Session 6: Saturday April 21)

Developed for: Little Mountain Neighbourhood House

Developed by: Celine, Camille, Jenny

**Unit Name:** Exploring the Local Farmers Market (*Field Trip - Nat Bailey Stadium*)

**Starting Location:** Riley Park Community Garden

**Total Duration of Session:** ~1 hour

### Overview

- Gardening Maintenance Routine
- Scavenger Hunt + Exploring the Market
- Free Time: Visit the stall around the Farmers Market that interest you
- Reflection

### Goals of Session

**Goal #1:**

To expose families to produce grown locally (versus produce we are familiar with in grocery stores).

**Goal #2:**

To expose families to local resources.

### Activity 1: Overview of Day's Plan

**Duration of Activity:** ~5 min

#### Activity Description

Go over the day's plan which includes farmers market visit. Also briefly brainstorm/discuss what are farmers market (i.e. who is there, what may you find there, why do people go there?)

#### Procedure

- 1) Gather everyone in one location and discuss the theme for the day.

#### Materials

- N/a

### Activity 2: Garden Maintenance

**Duration of Activity:** 15 mins

#### Activity Description

Participants to create a checklist to be completed to ensure the garden is in good shape. This may include ensuring the soil is watered, weeds are removed, plants look healthy, etc. Key

thing is to allow the kids to determine what they think is important to check for on a regular basis (it doesn't have to be entirely correct, can be imaginative).

Procedure	Materials
<ol style="list-style-type: none"> <li>1) Have children create a garden maintenance checklist with their parent/guardian.</li> <li>2) Provide resources and tools for the child to carry out their checklist (i.e. watering cans and water to water plants, shovels for weeds, etc).</li> </ol>	<ul style="list-style-type: none"> <li>- Paper</li> <li>- Pens</li> <li>- Pencils</li> </ul>

### Activity 3: Scavenger Hunt & Exploring the Market

**Duration of Activity:** 20 mins

#### Activity Description:

Families will tour the market and observe the different local produce and items available.

Procedure	Materials
<ol style="list-style-type: none"> <li>1) Have each family complete the scavenger hunt by exploring the Farmer's Market and visiting the vendors/stalls.</li> <li>2) Encourage families to look around the market and see what piques their interest.</li> </ol>	<ul style="list-style-type: none"> <li>- Scavenger hunt map/passport (listing specific stalls</li> <li>- Writing utensils</li> </ul>

### Activity 4: Free Time & Snack Time

**Duration of Activity:** 20 mins

#### Activity Description:

Families will be given time to interact with their children, or with others in an outdoor setting, have a small break, and/or explore the rest of the garden.

Procedure	Materials
<ol style="list-style-type: none"> <li>1) Dismiss the families for break.</li> <li>2) Encourage nature exploration and/or interactions with others.</li> </ol>	<ul style="list-style-type: none"> <li>- N/a</li> </ul>

#### **Activity 4: Reflection (*Suggested For Older Age Group*)**

**Duration of Activity:** 25 mins

##### **Activity Description:**

For this activity, have the participants create a journal entry that includes:

- i. A drawn picture of one of the plant in the garden
- ii. A journal entry that summarizes what happened during the day (concepts, skills, activities)
- iii. A/few sentences stating what did they enjoy the most about today, what was the most memorable thing?

Procedure	Materials
<ol style="list-style-type: none"><li>1) Have everyone regroup in front of the facilitators and a flipchart.</li><li>2) On the flip chart, have the elements of a journal listed out:<ul style="list-style-type: none"><li>- A drawn picture of one of the plants in the garden</li><li>- A journal entry of today's activities</li><li>- A/few sentence(s) stating what did they enjoy the most today, what was the most memorable thing?</li></ul></li><li>3) Announce to the participants that the next activity is a reflection/journal piece. State the elements that are to be done (as listed on the flip chart). This is to be done in parent/child groups.</li><li>4) Indicate the materials that may used to complete the piece (show where these materials are).</li><li>5) Allow families to work on the journals for ~20 mins (shorten if families complete the activity earlier).</li><li>6) Collect the journal entries from everyone and store it in a folder.</li><li>7) <b>Optional:</b> If time permits, gather everyone in a circle and quickly state one thing they didn't know how to do/know before today's session.</li></ol>	<ul style="list-style-type: none"><li>- Papers</li><li>- Pens</li><li>- Pencil crayons</li><li>- Markers</li></ul>

## Daily Lesson Plan (Session 7: Saturday April 28)

Developed for: Little Mountain Neighbourhood House

Developed by: Celine, Camille, Jenny

**Unit Name:** HARVEST Time!

**Starting Location:** Riley Park Community Garden

**Total Duration of Session:** 2 hours

### Overview

- Warm-up Activity
- Review Techniques (Gardening 101)
- Crop Harvesting
- Wrap-up Activity: Scrapbook + Information Sheet
- Final Reflection

### Goals for Session

**Goal #1:**

For participants to reflect and remember various aspects of the program.

**Goal #2:**

To ensure participants walk away from the program with something physical to remember it by later on their lives.

### Activity 1: Warm-up Game - “Evolution” (*Suggested For Older Age Group*)

**Duration of Activity:** 10 mins

#### Activity Description:

The warm-up game is a variation of “evolution,” which is a game of rock, paper, or scissors between different pairs of people occurring simultaneously. It focuses on the stages of plant growth (seed → shoot → plant).

Procedure	Materials
<ol style="list-style-type: none"><li>1) Participant must find one other person to play rock, paper, scissors with.</li><li>2) Winner evolves to the next stage while the loser stays as they are.</li><li>3) Stages:</li></ol>	<ul style="list-style-type: none"><li>- N/a</li></ul>

<ul style="list-style-type: none"> <li>i. Seed: person crosses their arms across their chest.</li> <li>ii. Shoot: holds one arm up in the air in an “upside down J”</li> <li>iii. Plant: hold both arms straight up</li> </ul> <p>4) Now the participants find new people to play rock, paper, scissors with.</p> <p>5) Repeat until 10 minutes has passed.</p>	
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## **Activity 2: Gardening Skills 101 Review (Suggested For Older Age Group)**

**Duration of Activity:** 20 mins (**Matching Game:** 10 mins, **Charades:** 10 mins)

### **Activity Description:**

The review of the motions/actions related to gardening will consist of two activities:

- i. Matching Game
- ii. Charades

<b>Procedure</b>	<b>Materials</b>
<ul style="list-style-type: none"> <li>1) Begin by splitting the group in half.</li> <li>2) Have one half of the group start with the matching game, and the other half start with charades.</li> <li>3) After 10 minutes, have the groups switch to the other game.</li> </ul>	<ul style="list-style-type: none"> <li>- Pictures of gardening technique/actions &amp; matching statement printed on separate sheets</li> </ul>
<p><b>Matching Game:</b></p> <ul style="list-style-type: none"> <li>- Match the pictures of gardening techniques/actions to the statement that describes it best.</li> </ul>	<ul style="list-style-type: none"> <li>- Pictures of gardening technique/actions &amp; matching statement printed on separate sheets</li> </ul>
<p><b>Charades:</b></p> <ul style="list-style-type: none"> <li>- Select one participant to start the game.</li> <li>- The player will think of a word or phrase that relates to gardening (i.e. harvesting).</li> <li>- He/she will act out the word while everyone shouts out their guesses one by one.</li> </ul>	<ul style="list-style-type: none"> <li>- N/a</li> </ul>



### Activity 3: Crop Harvest

**Duration of Activity:** 35 mins

#### Activity Description

Participants to harvest the vegetables from the program's plot using their method of choice. As the harvesting occurs, brainstorm with the families about how could they properly harvest some of the crops in order to allow them to grow back.

Procedure	Materials
<ol style="list-style-type: none"><li>1) Gather everyone around the plot and demonstrate how to harvest each type of vegetable:<ol style="list-style-type: none"><li>(a) <b>Kale</b><ul style="list-style-type: none"><li>- Remove the older, larger leaves closer to the base of the plant.</li><li>- Place leaves in a bag</li></ul></li><li>(b) <b>Lettuce</b><ul style="list-style-type: none"><li>- Remove outermost leaves</li></ul></li><li>(c) <b>Radish</b><ul style="list-style-type: none"><li>- Pull straight out the ground</li></ul></li><li>(d) <b>Peas</b><ul style="list-style-type: none"><li>- Place thumb at the top of the pod so that it is between your two fingers</li><li>- Apply pressure using your thumb and index finger to "pinch" the pod from the vine</li></ul></li></ol></li><li>2) Have everyone harvest their own vegetables.</li></ol>	<ul style="list-style-type: none"><li>- Bags (to gather vegetables and distribute)</li></ul>
<b>Suggested Question:</b>	
1) How would harvesting a leafy vegetable (lettuce) differ from a root vegetable (carrots)?	

### Activity 4: Wrap-Up Activity (*Suggested For Older Age Group*)

**Duration of Activity:** 30 mins

#### Activity Description:

Families will create their own scrapbook consisting of their completed journal entries. For those who have attended fewer sessions, information sheets or reflection sheets with given topics will be given to help those participants reflect on the entire process of the gardenings, and the program itself.

Procedure	Materials
<ol style="list-style-type: none"> <li>1) Have everyone regroup in front of the facilitators.</li> <li>2) Hand back the previous journal entries from prior sessions to the families, or also information/reflection sheets for those who attended fewer sessions.</li> <li>3) Announce to the participants that the next activity is to construct a scrapbook consisting of these journal entries. Those with information sheets can have their own reflective session, and create a book afterwards.</li> <li>4) Indicate the materials that may used to complete the piece (show where these materials are).</li> <li>5) Allow families to work on the journals for ~30 mins (shorten if families complete the activity earlier). Encourage the families to look over the entries with their children and relive/reflect on those entries.</li> </ol>	<ul style="list-style-type: none"> <li>- Coloured paper</li> <li>- Stickers</li> <li>- Ribbons/string</li> <li>- Markers</li> <li>- Pencil crayons</li> <li>- Pipe cleaner</li> </ul>

## Activity 5: Final Reflection

**Duration of Activity:** 10 mins

### Activity Description:

For this activity, the participants will share their final thoughts regarding the program by reflecting on how the program will carry on in their daily routines and lives.

### Objective

- For participants to reflect on the skills and concepts learnt during the session.
- For participants to connect aspects of the program with their daily lives and routines.

**Participants will be able to**

Develop sustainable skills, practices and positive feelings toward the natural environment through the various opportunities of this session and by capturing those moments as a “screenshot.”

Procedure	Materials
<ol style="list-style-type: none"> <li>1) Have everyone regroup in a circle with the facilitators.</li> <li>2) Going around one by one, have everyone state one thing they will continue to do after the program is finished. For the parents in particular, ask what they enjoyed about the program.</li> </ol>	<ul style="list-style-type: none"> <li>- N/a</li> </ul>