

## **VBE School Food Garden Policy Statement**

Passed February 2010

The Vancouver Board of Education recognizes the important role school food gardens can play in students' learning. Garden-based learning can enhance academic achievement through integration of hands-on experiences into diverse subjects such as math, science, nutrition and environmental education. Garden-based learning also allows students to discover and experience fresh, healthy food and to make healthy food choices.

The use of school food gardens is consistent with the Board's commitment to sustainability and healthy food environments. School food gardens allow for the incorporation of fresh, local fruit and vegetables into the cafeteria and school meal program. A school food garden can also play a role in increasing the food security of the students, families and the community by providing space for the production of food through collaborative community and school gardens.

The Vancouver Board of Education therefore encourages and supports the development of school food gardens, recognizing the many benefits to developing and maintaining school food gardens including opportunities for learning, for increasing access to healthy food, for promoting enhanced social and emotional development and for contributing to the greening of school grounds and the building of green spaces for neighbourhoods in Vancouver.

District goals, relative to garden projects, are to help the school community carry out a successful and sustainable project that meets the above stated outcomes while adhering to district codes and standards. The VBE Food Gardens Process document outlines the process of planning, designing, implementing, maintaining and sustaining school and daycare food gardens (located on VBE property) to ensure their success over the long term.

## Guiding Principles for the VBE School Garden Policy

The following guidelines are to help the school community plan and implement a successful, sustainable project, which meets codes and district standards.

- To embrace the spirit of caring, social responsibility, inclusiveness, co-operation, team-work, consensus and collaborative processes in the development of the garden space.
- To ensure the involvement of children (daycare) and students (schools) throughout the planning, design, construction and maintenance of the garden.
- To give students the opportunity to plant, harvest, prepare, and eat food they have grown.
- To integrate eating experiences, food gardens, food preparation and nutritional education into the school curriculum for all grades. To ensure that the garden space is used to deliver and is connected to curriculum studies.
- To encourage the use of environmental 'best practices' for organic gardening (pesticide and herbicide free, no treated lumber), water use, soil building, harvesting and seed saving.
- To support students in the growing of culturally appropriate foods at their schools as well as to explore the cultural food and agriculture traditions represented by the diverse populations of Vancouver.
- To promote environmental stewardship by involving students and local community in the ongoing maintenance of the garden space, weeding, watering, and garbage removal and compost care.
- To respect the rights and responsibilities of the VBE Grounds crews as laid out by their collective bargaining agreements.
- To ensure approvals and implementation take place within a reasonable timeframe.
- To ensure that no poisonous plants shall be used in the school garden, and to encourage the use of heirloom fruit and vegetable varieties where possible.
- To ensure that the garden project is sustainable through ongoing maintenance throughout the school year and is continued through subsequent years.

## **Vancouver Board of Education Gardens Process**

Revised October 2011

### **Welcome to the VBE Gardens Process**

The Vancouver Board of Education (VBE) encourages and supports the development of school gardens for learning, for increasing access to healthy food, for community and social development as well as beautification and greening of the schoolyard. Refer to the VBE School Garden Policy Statement for background on defining school gardens, benefits of school gardens and composting and VBE support for school gardens. Many of the items in this process do refer to food gardens, however, the actual process steps are to be used for all garden and greening processes.

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## **Step 1. Form a Garden Team and develop a project idea**

A school garden that engages the broad school and neighborhood community is more likely to be successful. School gardens can be wonderful places with vast potential for engagement. During the project idea step, begin to discuss the garden idea with parents, school administration, teachers, students and external partners or groups.

Like any project, a project leader is essential, someone with time and energy to dedicate to the project. There is a lot of work involved in the creation of a garden. When planning your project, plan it in stages so that energy and focus can be applied in ways that also bring success with a staged approach.

Creating a successful garden project will take some work, but the result will be worth it. For the garden to be viable in the long-term, it will need involvement from more than one or two people. The first step in the process is to form a school Garden Team to ensure a minimum of support for the project. For example, we suggest a minimum 2 staff, 2 parents, 2 students, an administrator and a custodian, but the people and numbers will vary depending on the school. This Team could be a sub-committee, a stand alone team, or a sub-group of the PAC, environmental or green club.

### **Things to discuss at this step;**

- Your vision and goal for the project
- The location, size and type of garden. (e.g. do you want pots with herbs, raised garden beds, fruit trees, etc.) What type of garden do you want, food, butterfly, flower? Will you have fruit trees?
- Who will be the liaison to VSB Grounds (the Principal or Vice-Principal)
- Where you will seek funding
- Ideas for summer maintenance
- Possible partners
- Who else should be part of the garden team? missing (other teachers, school programs)
- Review the Food Garden Application (Step 2) to become aware of what will be expected for the application –you don't have to address all of the items in Step 2 at this stage.
- Establish a Garden Team if one doesn't exist yet.

See Appendix A for the Frequently Asked Questions to help guide your team's discussion.

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## **Step 2. Develop your proposal (Proposals are due Dec. 1<sup>st</sup> OR July 1<sup>st</sup>)**

Now it's time to develop the garden proposal. Work through the following seven areas with your garden team and then submit your plan in writing to the Grounds Supervisor. Note that proposals submitted and approved in the December 1 round will be installed in February and March. Proposals approved in the July 1 round will be installed in October and November of the following school year. Proposals can be submitted before the deadlines and are reviewed on a first come basis.

- A. What is the scope of your garden?
- B. What is your project timeline?
- C. What are your possible funding source(s) and your budget?
- D. What is your garden design?
- E. What is your plan for maintaining the garden?
- F. What is the plan for the foods produced?
- G. What is your composting plan?

## 2A. Develop your garden scope

The first step to a successful project is to define the project scope. This is different from the more conceptual idea discussed in Step 1. The scope should include all of the details of the project.

These questions may help you outline the project scope:

- What are the goals for this garden? Education? Community building? Food Security? Food production?
- Who will be using this garden? Is it a learning garden for students and parents during the school year? Is it a community garden intended for year-round use? Will another organization be sharing use of the garden?
- What is the location and size of the garden? What is the composting plan?
- Who will be participating in the design of the project? How will you get community input into the design of the project?
- Who will be installing the garden? Work with VBE Grounds to ensure it follows VBE union codes and standards.
- How will the garden be watered? What is the water source and how will water be transported to the garden? Can plants be used to minimize the need for watering? Will you be raising funds for a water hook up or irrigation system?
- And most importantly, how will the garden be maintained long-term? How will it be maintained over the summer? The VBE requires a long-term maintenance agreement with the school garden team and administrator.

Consider partnering with an external organization or finding volunteers who have expertise in gardens. Potential partner groups or volunteers include:

- a. Evergreen
- b. Environmental Youth Alliance (EYA)
- c. Society Promoting Environmental Conservation (SPEC)
- d. Master Gardeners
- e. Landscape Architects
- f. UBC students (Land and Food Systems, landscape architecture, the UBC School of community and Regional Planning (SCARP)
- g. Neighbouring School
- h. Local church, community centre, or seniors' centre

## 2B. Develop your project timeline

The timeline should include:

- Time to design the garden and complete the garden drawings
- Time to review the design with members of the community, students and the school staff. This will require setting up meetings and giving attendees sufficient notice before meetings.
- Time for VBE grounds and maintenance staff to review the garden design to ensure that standards and codes are met and availability of grounds staff.
- Time for construction, including ordering supplies, soil, etc
- Time for planting, including determining what to plant and when it could be ready.

It is helpful to think about when you hope to have the garden \*finished\* and then work backwards. Be realistic, planning and implementation always takes much longer. Be cognizant of the school schedule and teacher/student timetables, holidays and other limitations.

## 2C. Identify your possible funding source(s)

You need to identify current or potential funding sources for the garden. The VBE does not fund garden projects.

Ideas for fundraising:

- Apply for grants
- Partner with non-profits
- Seek community involvement, pro bono and other donations in design, materials, and implementation
- Fundraising initiatives

Costs to consider:

- water hook up and irrigation (if needed)
- soil and amendments
- garden tools
- seeds, plants
- shed / tool area
- wood (if raised beds are to be built) – see Appendix B for design and cost
- fencing (if needed)composter – see Section 3G
- signage

## 2D. Develop your garden design

For this phase, you will need to identify where specific elements of the garden will be located and what materials will be used for plants, walkways, edges, fencing, etc.

It's important to have a long-term vision of the garden, but remember to start with a small project in your first year. A larger garden project can be developed in phases over a few years. Phasing allows the committee to evaluate how the garden is working and make corrections in future phases.

The project design is critical to the success of the project. A successful project will use materials that are safe for the school, rugged, drought- and rain-tolerant, and low maintenance.

This is where student input is most valuable and which gives students a sense of contribution and buy-in to the project. We need to value the process as much as the outcome. A good process would be participatory, collaborative, creative and inclusive. Think about who needs to be engaged in the process. It is important to bring in expertise and to provide as many opportunities for school wide contribution and feedback.

A key consideration in a design process is how the garden will be used, the activities that students imagine themselves doing and then working from that to specific garden features.

Consider these important design issues:

### Location and physical layout

- Ensure the project is well located, i.e.:
  - o near the school building
  - o close to a water supply for plant watering as well as hand washing
  - o with access to parking or a driveway for delivery
  - o visibility to surrounding community
  - o receives ample sunlight (at least 6 hrs per day) and
  - o is manageable in size
  - o is away from dumpsters/ garbage bins
  - o doesn't abut a green space due to the presence of higher numbers of rodents
- Fencing may or may not be required and will be decided based on site circumstances by the Principal and Grounds Supervisor. Fencing can be helpful in areas where dogs and other animals frequently travel.
- Make garden beds accessible to all students. At least part of the garden must be accessible for children with limited mobility (height, surface material and width of pathway). See Appendix B for pricing and construction of 4x8' beds.
- Include a secured place to store tools/hoses and materials nearby with a strategy for access to these tools over the summer months. A simple wooden chest / bench that can be locked with a combination lock can work. It is useful for teachers or older students to be able to access simple tools to do garden work without having to find the janitorial staff or other staff each time to unlock tools.

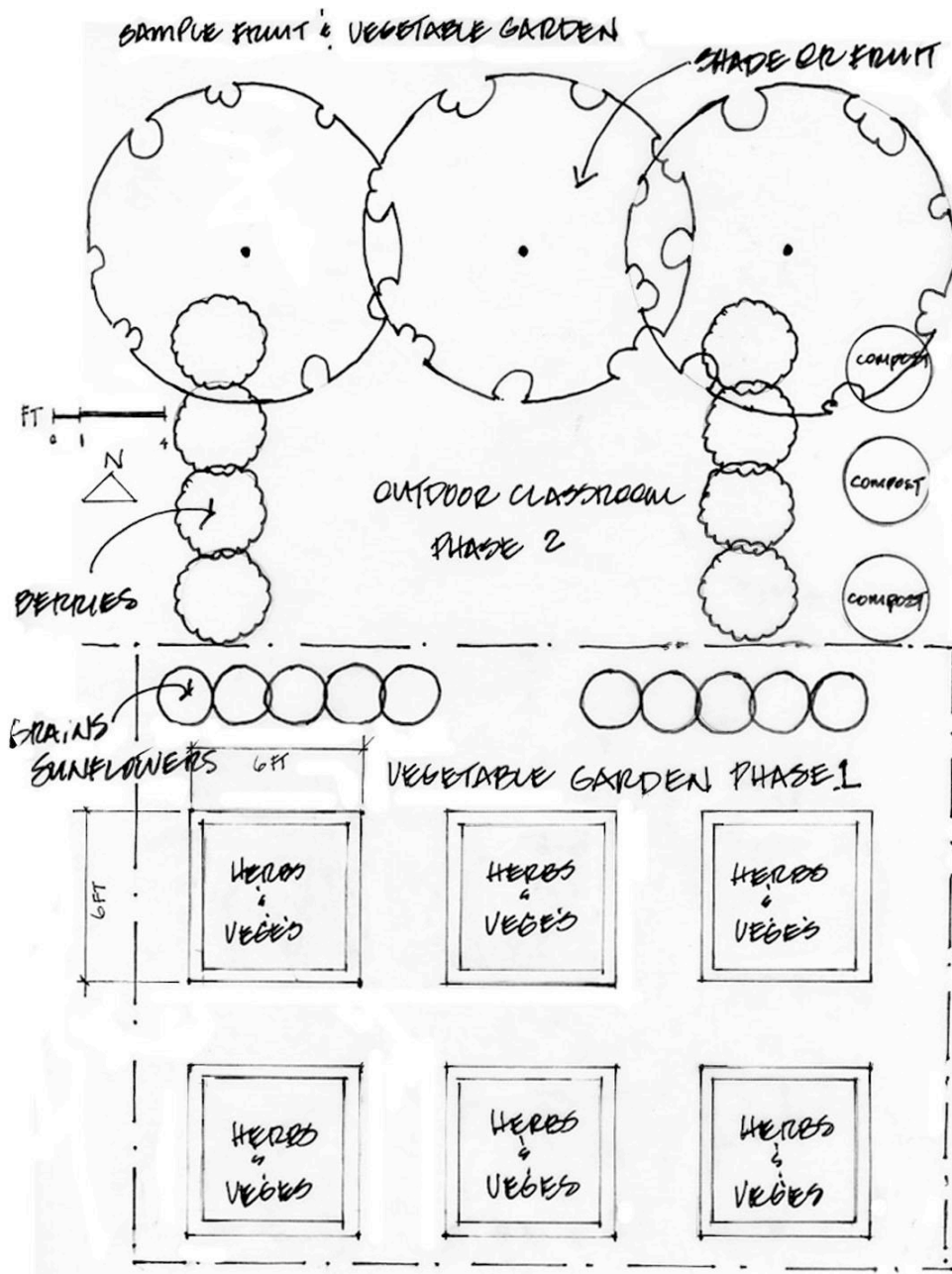
- Drip irrigation using soaker hoses are acceptable. Timers are encouraged (in lock boxes) so as to encourage watering in the early morning.
- Site preparation requiring large equipment is the responsibility of the VBE Maintenance Dept.
- Safety first! Avoid trip or slip hazards.
- Avoid vandalism opportunities (including rocks that could be tossed, skateboarding edges, easily broken sculptures, elements that give access to school building roofs)
- VBE Grounds will not allow water features due to safety concerns. Covered features such as arbors will also not be allowed.

### Plants

- Consider how plants grow over time and may inhibit pedestrian flow when identifying plant locations.
- Consider how plant debris will be composted or disposed of.
- Engage "experts" to flesh out the design. Work with a master gardener, landscape architect or designer. The architect can help with designing "hardscape" areas such as constructed paths or courtyards. A master gardener is particularly knowledgeable about plant selection and placement. You may have garden designers or architects in your school community who may be willing to volunteer.



Example of a garden drawing:



## 2E. Create a garden maintenance and management plan

The VBE requires a Long-term Maintenance Plan and Agreement. The following are considerations to include in your written maintenance plan.

Regular up-keep:

1. Determine who will sow, weed, compost, and water during the school year. If a number of classes are using the garden, it might be helpful to create a schedule for caring for the garden.
2. Develop a watering plan: who will water the garden and when? If you plan to plant fruit trees then a 3-year watering plan needs to be established until the trees are well established.
3. Describe your plan for compost maintenance to discourage rodents.
4. Establish and share a summer site management schedule with names and contact information of volunteers. Include procedures, location of keys to access tools, and days scheduled. Keep a gardening journal so volunteers can see what has been done i.e. fertilizing, weeding, planting, watering etc.
5. Outline your plan for winter maintenance (i.e. cover crops) and spring soil preparation.
6. Plan for specialty maintenance such as tree replacement, large tree installation or tree pruning.
7. Include a statement acknowledging and adhering to VBE standards including avoiding the use of pesticides, fungicides and herbicides on VBE properties.
8. Include a statement that the team will respond in a timely manner to correct any safety issues created by the garden or any violations to VBE codes.

Long-term planning

1. Develop a long-term plan to maintain any garden-owned materials (eg. wooden beds, fences, irrigation, paths, etc)
2. Develop a long-term strategy to keep enthusiasm high among volunteers and to recruit new volunteers.
3. Identify the number of years each team member commits to maintaining the garden and outline a succession plan. There should be a minimum 3-5 year commitment and plan. The agreement should be reviewed and renewed each year.
4. We encourage you to put aside some of your funding for unexpected contingencies.

## 2F. Develop a plan for the use of foods produced

Preparing and sharing foods is a rewarding part of growing foods. Foods need to be prepared following food safe principles.

When harvesting and using food from the garden:

1. *At least* one person per school who is involved with the garden and/or food preparation should be Food Safe certified. This person should be able to consult with others involved in the food related events / food production.
2. Anyone who is sick should not be involved in food preparation.
3. Anyone involved in harvesting foods should wash their hands before *and* after harvesting produce.

4. Anyone involved in food preparation should wash their hands before doing any food preparation.

For information on getting Food Safe certification and on food safety principles, visit [www.foodsafe.ca/](http://www.foodsafe.ca/) and [www.fightbac.org/](http://www.fightbac.org/)

A) If the kitchen you use does not have an operating permit (eg. staff rooms, home economics classrooms)

- produce may be washed, peeled, cut and served raw to students (e.g. taste tests)
- produce may be prepared /cooked and consumed only by the involved classes
- washed produce may be donated to school families, charities or food banks
- washed produce may be sold as a fundraiser

B) If the kitchen you use does have a food service operating permit \* (eg. cafeterias, restaurants, other kitchens that have applied to a health inspector and received an operating permit)

- any of the food preparation activities listed above are allowed, and additionally:
- produce may be prepared in the permitted kitchen for sale or for educational purposes, and
- produce may be prepared for use in the school meal program.

\* To learn about the process of obtaining a food service operating permit, see the BC Public Health Act – Food Premises Regulations at [www.foodsafe.ca/downloadfiles/FSFoodservices02-FoodPremReg.pdf](http://www.foodsafe.ca/downloadfiles/FSFoodservices02-FoodPremReg.pdf) And the Vancouver Coastal Health website at [www.vch.ca/your\\_environment/food\\_safety/permits/](http://www.vch.ca/your_environment/food_safety/permits/)

C) If garden produce is processed into preserved food products for consumption later by the class or for retail sales, consult Appendix I of the Guideline for Sale of Foods at Temporary Food Markets, [www.vch.ca/media/Guidelines\\_Sale\\_Foods\\_Temporary\\_Markets.pdf](http://www.vch.ca/media/Guidelines_Sale_Foods_Temporary_Markets.pdf). It is recommended that preserves be limited to the low risk category; those preserves with a water activity of >85 or less or a pH value of 4.6 or less.

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## 2G. Develop a plan for composting

Many schools are either beginning, or wanting to begin some kind of composting system at their schools. There are four steps for starting a school composting system.

### 1) Training

Any school staff or students that want to begin a composting program must arrange to take a free composting seminar from the **City Farmer** demonstration garden at Maple and 7<sup>th</sup> Ave in Vancouver. You can contact the great folks at City Farmer by calling **604-685-5832** or emailing [cityfarm@interchange.ubc.ca](mailto:cityfarm@interchange.ubc.ca) . [www.cityfarmer.org/](http://www.cityfarmer.org/)

## 2) Select a Composter

There are many different types of composters, each has benefits and drawbacks. ***Your composting program's success will be more reliant upon the process and commitment than on the type of composter you choose.*** The folks at city farmer can show you various types of composters.

One type that we strongly recommend is called 'The Rodent Resistant Compost Box'. See Appendix D for the drawings. The cost for this composter is approximately \$800 so please factor that into your decision. If you would like to have one of these composters built for your school, please contact the VBE Grounds Supervisor. Some schools have had their woodshops build these units.

## 3) Select a Location

Once you have selected a location for the composter, include it in a drawing as part of your garden proposal. Composters must be lockable.

Please note that VBE Grounds will not break through cement to install a composter, so please take this into account when considering your composter location. The Grounds Supervisor will make the final decision on the appropriate location of the composter.

## 4) Install the Composter

Once the location has been approved by the Grounds Department, you can go ahead with the installation (the Grounds Department can do this for you for a nominal fee. If you would like the Grounds Department to install your composter please let us know).

For more information about composting, see Appendix C.

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## Step 3. Submit your proposal and meet with VBE Grounds

**Proposals are due by December 1 or July 1.**

Submit your written garden proposal to the Grounds Supervisor who will review it and let you know if you are ready to go to Step 4.

You can submit your application

via email: [jepplette@vsb.bc.ca](mailto:jepplette@vsb.bc.ca)

via the blue bag system: Send to VBE Grounds Supervisor

Grounds will contact you to arrange a meeting time. This is the stage where your proposal will be adjudicated.

#### Step 4. Garden Installation

Once the project is approved for construction, funds are raised and available, and all agreements signed and submitted, you are ready to install the garden!!

1. VBE Grounds staff prepare the site for gardening or teachers and students may prepare the site with permission from the VBE Grounds dept (e.g. pull up lawn or sheet mulch, delineate plot boundaries)
  2. VBE staff or Students/parents and teachers may prepare garden beds (e.g. add soil amendments or build boxes). Raised beds may be built off-site to VBE standards and installed by VBE maintenance staff.
  3. Installation will take place depending on when your application was submitted. Proposals approved in the December 1 round will be installed in February and March. Proposals approved in the July 1 round will be installed in October and November of the following school year. Proposals can be submitted before the deadlines and are approved on a first come basis.
  4. Final inspection. The Grounds Supervisor will complete the final inspection.
  5. Garden expansion. Please note that future garden expansions must also be approved by Grounds before being implemented
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#### Step 5. Celebration and Reflection

Congratulations – you’ve done it. You now have a beautiful garden - now it’s time to **celebrate!** Consider holding a community event for the opening. Neighbours and other community members who have not been directly participating in the project may be excited to get involved once they see the final project! Fall harvest celebrations also provide a rewarding opportunity for school and community garden events.

#### Congratulations and happy gardening!

The writing team was Kevin Millsip - VBE Sustainability, Brent Mansfield of Think&EatGreen@School, Sarah Carten and Melanie Kurrein at Vancouver Coastal Health and the VBE Grounds Department. The process steps were adapted from the Portland Public Schools Garden Policy. And a special thanks to all of the great food, garden and other folks, staff and students who provided feedback for this policy.

## **Appendix A – Frequently Asked Questions compiled by VBE Grounds**

The questions below are the ones that grounds will ask you at your first meeting so please take some time to look them over.

**Q:** Our School wants to design / install a new garden. What is the first step?

**A:** Read over this process and develop your proposal.

**Q:** How do we arrange a site meeting regarding our plans?

**A:** Once you have emailed the grounds supervisor your completed proposal, you will be contacted by grounds to set up a site meeting.

**Q:** What should we prepare for our site meeting?

**A:** A detailed outline of the project, including pictures, sketches and/or models. Proposed locations and all the pertinent information gathered during the review of the VBE garden policy. Choose a time when several of the school's garden team members can attend.

**Q:** Can VBE staff do the work for us?

**A:** Yes. After approval has been granted for your site, grounds staff will put together a quote outlining the work to be completed. This will be sent to the Principal in the form of a repayable. Once this document is signed for acceptance and guarantee, we will then arrange a date to complete the work.

**Q:** Does VSB staff have to do the work for us?

**A:** It depends on scope of work requested. Grounds will inform what work must be done by VSB staff and which work can be done by the school.

**Q:** How much does it cost?

**A:** This depends on the scope of work requested. For example electrical connections and water hook ups will be done by staff. Other types of work may be done by the school, options will be discussed with VBE Grounds.

**Q:** How quickly can we have the work completed if VBE does the work?

**A:** Installation will take place depending on when your application was submitted. Proposals approved in the December 1 round will be installed in February and March. Proposals approved in the July 1 round will be installed in October and November of the following school year. Proposals can be submitted before the deadlines and are approved on a first come basis.

**Q:** May we expand our project ideas into parking lots, playing fields etc.

**A:** Greening projects should not displace other important and appropriate functional uses of the grounds. This includes opportunities for recreation and educational uses, identified locations for portables and ancillary uses such as parking, fire access or any negative impacts on playing fields.

**Q:** Will the VSB incur any of the costs of our project.

**A:** No. The VSB will not take on any costs of these projects.

**Q:** What happens if the gardens are not successful?

**A:** If the school decides they can no longer manage the garden, they should contact Grounds to discuss options. VBE staff will monitor the garden additions over time to make sure they are being managed and maintained correctly. If there are any issues they will notify the principal on site of the concerns. If there is no action taken to revive and/or clean up the area(s) they will be removed by VBE staff.

**Q:** Are we permitted to install water features?

**A:** No. The VBE does not permit any water features for safety concerns.

**Q:** Can we have rainwater collection?

**A:** Yes. Rain water collection for irrigation is allowed.

**Q:** Can we have a water hook up and /or irrigation supplied to our gardens?

**A:** The Grounds Department can install this for you. The range of costs is dependant on the size, scope, distance, equipment requirements and labour. Both Grounds and Plumbing departments would be involved in this process.

**Q:** Where do we store our tools? Can we build a garden shed?

**A:** Wooden sheds are not recommended. We would like to see a smaller, lockable container for tool storage that is agreed upon with the Grounds Supervisor. Prefabricated metal sheds can work. Some schools may have storage areas available, but the Grounds Department's storage rooms are not to be used by garden groups. Grounds can recommend specific types of sheds, contact them for more details.

**Q:** Can the VSB provide fencing for our project area?

**A:** VSB installs chain link materials only. The costs depends on the size, scope, distance, equipment requirements and labour. Other types of fencing such as cedar can be approved. The responsibility for upkeep, repairs and dismantling of all fencing other than chain link fencing is the responsibility of the school.

**Q:** Are arbors, trellises, pergolas or gazebos allowed?

**A:** Due to safety concerns arbors, trellises, pergolas, are not accepted. Gazebos are not **allowed as roof structures are** not allowed on VSB sites.

**Q:** Once we have completed our garden project, may we expand or add to this established area.

**A:** Any additions or modifications must be proposed to the Grounds Supervisor for approval. We suggest building a school garden over time and in stages. If you have different stages of a garden in mind and stage 1 has been successful and is being cared for properly, you may want to start stage 2. Garden additions are treated in the same way as a new garden, in that additions should be discussed with Grounds before any work is done on a second stage.

**Q:** I still have more questions. Who can I call?

**A:** VBE Grounds Supervisor ph: 604-713-5660 or email [jepplette@vsb.bc.ca](mailto:jepplette@vsb.bc.ca)



## Appendix B – Garden Bed Construction and Pricing

### Materials and pricing for a typical 4x8 ft. wooden planter (if built through Grounds)

#### Materials:

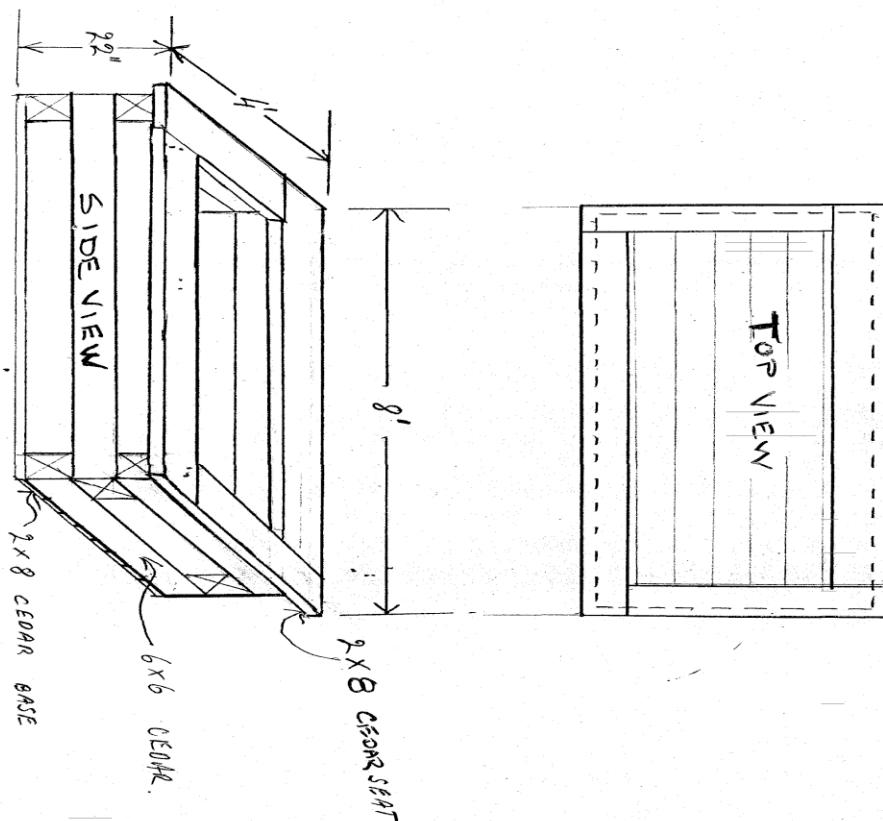
- Five 6x6 cedar, 16ft. long
- Two 2x8 cedar, 16 ft. long
- Eight 10 inch galvanized spiral spikes
- Sixteen 4 inch deck screws
- Two cubic yards of soil

The above list will be make one planter at a cost of \$800 with labour and site preparation included.

If the planter is to be placed on blacktop and a bottom is required then add:

- Four 2x8 cedar, 16 ft. long
- Eight feet of 6x6 cedar
- Thirty 3 inch deck screws

For a total cost of  
\$1,000.





## **Appendix C – Composting Articles**

There are two potential drawbacks of composting that can be avoided by following a few basic principles. The two drawbacks are producing smells and attracting pests, especially rodents. Compost can produce odors if you include dairy, fish or meat or if it becomes partially anaerobic. Compost will become anaerobic when there is not enough oxygen flowing throughout the pile. This will happen if it is too wet, if there are materials in it that are matted or if the pile is unevenly mixed. Pests will generally be attracted only if your compost produces strong odours. If you take the advice of the composters who have come before you, included in the next sections of the manual, you should be able to reap the benefits of a compost pile without any of the drawbacks.

### **Pile composting**

Here's why hot compost piles decompose faster than cold piles and how to make a hot pile by:

- Starting your compost with a “critical mass” of material, or enough material to fill, an 8 cm x 8 cm x 8 cm (3' x 3' x 3') space.
- Balancing your brown and green materials and avoiding meat, fish and grease.
- Chopping up raw materials before adding them to your compost.
- Aerating your compost pile maintaining the proper moisture in your compost pile.
- And keeping the pile's PH near neutral.

Hundreds of decomposer organisms which range from tiny bacteria to worms, beetles, and other insects come together to do the work of pile composting. When organic materials are combined in a pile, microbial, or bacterial, activity begins almost immediately. The bacteria are already attached to each piece of organic matter that is added to the pile.

The three bin wood and wire mesh unit is where most of the composting is done, the three plastic units are used for overflow, and the leaf unit is used to store brown materials to put into the compost, once they are partially composed. People who use the compost operation always add raw compost materials to the far left of the three bins. The middle cell holds partially composted material and the right cell holds compost that is almost finished. All three bins are turned and watered once a week by the Children's Garden Program staff or volunteers. When the cell fills up, the Children's Garden staff empty the right cell into the gardens or put it into a holding area. They then shift the contents of the other two bins to the right and begin filling the left bin once again. The materials are usually shifted during community events because it requires a lot of time and effort and because involving the community creates awareness of composting and the garden.

The three bin wood and mesh unit is used more than the home composting units for a number of reasons. The first is that it is easier to turn the materials inside, since they have a wider opening at the top and the front is removable. The second is that the capacity of the three bin unit is greater than that of the home composting units which allows for more material to be composted. The third is that because there are three bins connected and they open easily, they are ideal for demonstrating the composting process. Because only one cell is filled at a time each of the three cells is always at a different phase of decomposition clearly demonstrating how composting works. This is very important because the Children's Garden has an educational focus. Having the home composting units at the site is important as well as they demonstrate different types of containers that individuals or families can use.

The raw organic material that is put into the High Park children's garden compost comes from both the site and outside sources. All of the plant and vegetable waste produced from the garden and by those attending programs at the site is put into the compost. This includes weeds that have not gone to seed and plant trimmings. Leaves from the site, which is mostly oak as well as straw that has been used as mulch are the brown material that is added to the compost. Local community members who participate in programming on site are invited to add their household plant and vegetable waste to the compost and some do. In addition to this, coffee grounds from a local organic coffee shop and eggshells from a local restaurant are also occasionally added. Community members very rarely add anything to the compost that should not be added such as dairy, meat or fish products. On rare occasions non-organic waste such as plastic bags or drink containers are found in the containers.

The High Park compost usually gets enough raw materials at once to generate heat. For three years the compost site was getting all of the coffee grounds from an organic coffee shop. At the same time the compost would reach temperatures around 60 degrees Celsius and would be finished in about six weeks. Since the City of Toronto has started curbside collection of compostable waste from restaurants, coffee grounds are now only occasionally added to the pile. This has slowed the process. Temperatures of the piles are not monitored daily but it seems that they reach 40 to 50 degrees Celsius and they definitely maintain levels well above outdoor temperatures. Between the spring and fall the site produces three to four finished bins of compost. During the winter the composting process slows considerably due to low temperatures and reduced maintenance. Two bins are left dormant and fresh material is added to one bin only. When the spring begins new materials added to the bins that have sat dormant to jump-start microbial action and to finish off the compost that has been sitting all winter.

## Appendix D – Construction plan for composter

### Construction Plan for a Home-built Rodent Resistant Single Bin Compost Box

Materials are available at most building supplies stores and will cost about \$115. The box will take about 8 hours to build. The exact dimensions are used wherever possible, but the term “approximately” is used because actual width and thickness dimensions of cedar fencing and rough cedar vary from store to store and board to board.

#### MATERIALS

##### Cedar (rough or fencing)

- 2x4's – 4 @ 42", 1 @ 36", 2 @ 34"
- 2x2's – 2 @ 36", 2 @ approx. 27 1/2"
- 1x6's – 21 @ 36", 4 @ approx. 30"
- 1x4's – 4 @ 36", 2 @ approx. 30", 4 @ approx. 16 7/8", 2 @ approx. 32, 2 @ 27"
- 1x2's – 2 @ approx. 31", 4 @ approx. 16 7/8", 1 @ approx. 30"
- 4' of 2x2 for lid support

##### Hardware

- 3 boxes of bell wire insulated staples (5/8"–100/box) or 5/8" poultry staples (where available)
- 1 lb of 2 1/4" galv. spiral nails
- 1/2 lb of 3 1/4" galv. spiral nails
- 40 - 1 1/4" galv. brass or stainless steel screws
- 3" strap hinges

##### Wire Mesh

- 19' of 1/4" galv. Wire mesh (hardware cloth 36" wide)

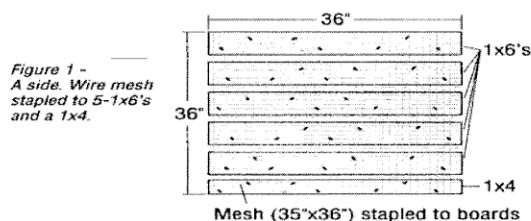
##### Tools

- Measuring tape, drill, bit for screws, hammer, tin snips, hand or circular saw, carpenter's square

#### CONSTRUCTION

##### 1. The Sides and Back

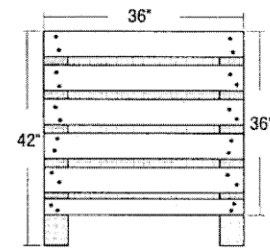
- Cut 15 1x6's 36" long. Cut 3 1x4's 36" long. Cut 3 pieces of wire mesh 35" long. Cut 4-2x4 posts 42" long.
- The two sides and back are identical. Lay 5 1x6's and 1 1x4 on level surface with approximately 1" between each board. Lay piece of wire mesh on top. Ensure that everything is square and staple mesh to boards (approx. 6 staples/board). See Figure 1 below. Repeat for other side and back.



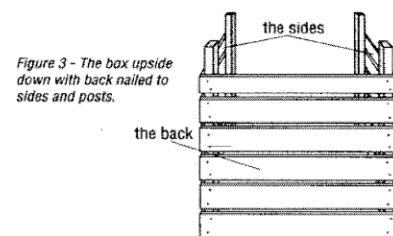
To build the sides lay 2 2x4 posts on level surface 36" apart. Lay mesh and board panels on top with mesh between boards and posts.

Ensure that everything is square and nail posts with 2 1/4" galv. ardox nails.

Figure 2 - A side panel nailed to 2 posts with the mesh between boards and posts.



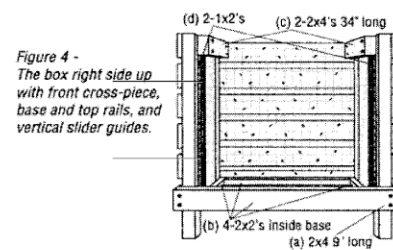
For the back - Stand the 2 sides on a level surface facing each other with the 6" of post up as shown in Figure 3. Ensure that everything is square before nailing the back panel with 3 1/4" galv. ardox nails.



##### 2. Supporting Rails and Bottom

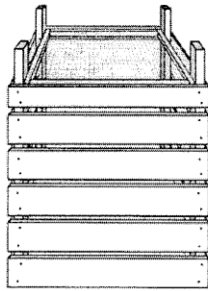
Set 3-sided box on posts. See Figure 4 below.

- **Front cross-piece** – Cut 2x4 36" long, ensure that box is square in all planes, and nail to front posts.
- **2x2 Base Rails** – Cut 2x2's 36" long and nail to inside of posts at base of box. Measure for other 2 2x2's (approx. 27 1/2") and nail to front posts.
- **Top Rails** – Cut 2 2x4's 34" long and nail from back of box to front posts. Note that they will end two inches from the front edge of front posts to allow for sliding front.
- **Vertical Slider Guides** – Measure vertical distance from top of 2x2 base to bottom of 2x4 rail (approx. 31"), cut and nail 1x2 to post 2" back from front of post to guide removable front sections.



**Bottom** – Turn box upside down. Cut mesh 39" long. Lay mesh with 39" length running from front to back. Cut 2x4" holes in mesh for the posts and staple mesh to base.

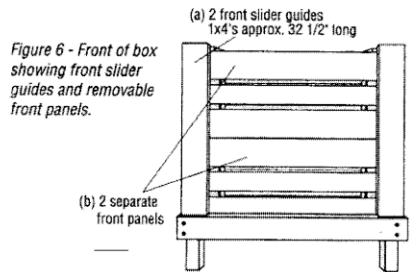
Figure 5 - The bottom of the box with mesh stapled around posts.



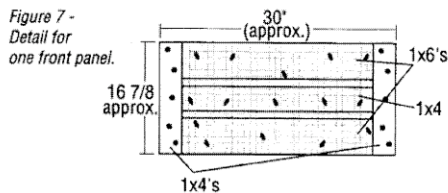
### 3. Front

The front is made with two front guides nailed to the front posts and two removable front panels. Each removable panel should be approximately 30" wide and 16 7/8" high and is built to slide in and out of the top of the box.

- (a) **Front Slider Guides** – measure distance between top of base and top of post (approx. 34") and cut 2 1x4's to fit. Nail to front posts with 2 1/4" galv. nails.



- (b) **Front Sections** – Measure distance between the inside of the 2 front posts of box (approx. 30 1/4" or 1/4" less than the distance between the posts). Cut 4 1x6's and 2 1x4's to fit. Cut mesh to fit each section (2 @ approx. 29"x16") and staple to 2 1x6's and 1 1x4. Repeat for other front section. Cut 1x4 bracing to fit (approx. 4 @ 16 7/8"). Screw 1x4 bracing to front sections.



### 4. Supporting Rails and Bottom

- The top is formed from two sections – 2 boards fixed at the back and a removable lid.

- For the fixed section cut a 1x4 and a 1x6 36" long and nail to the box across the back.
- For the removable section cut 5 1x6's 36" long and lay them edge to edge across the top of box. They should end up flush with the front of box. If they don't because of varying widths, add a piece of 1x2 or trim to fit. Lay these 5 boards edge to edge on a flat surface and staple mesh cut to approx. 36"x27". Cut 2 1x4 braces 27" long and attach to the mesh side with screws. These braces should fit inside the 2x4 rails at top of box and extend approximately 1" out the back of the removable lid to control the lid pivot. Cut a 1x2 approx. 30" long and attach with screws as shown so that it fits directly over top of front panel and inside of front posts.

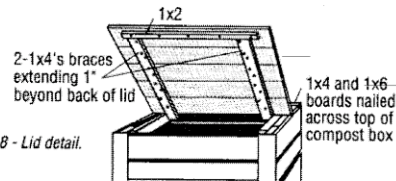
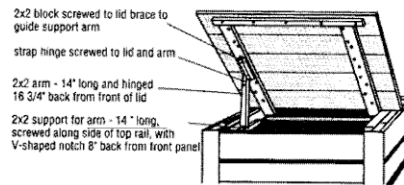


Figure 8 - Lid detail.

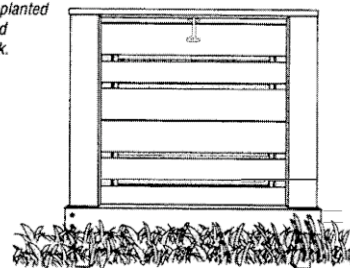
- Make the lid support with 3 2x2's (an arm, a support for arm, and a block guide) and a 3" strap hinge. The arm is 14" long and screwed to a strap hinge 16 3/4" from front of lid. When the lid is lifted the arm drops into V-notch on the 2x2 support for arm.

Figure 9 - Lid support detail.



- Attach safety gate hook to lid and front section. Select a location for the composter and dig four holes 6" deep. Set the composter posts in the holes, fill holes with leftover dirt, and the composter is ready for work.

Figure 10 - The completed compost box planted in position and ready for work.



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