

## PLANNING TO PLANT

### **PLANT SEASONS (\*When and for how long a certain plant grows\*)**

To figure out what to plant in your garden, you have to first know what can grow in the climate where you live.

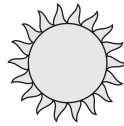
The **climate** of a *region* (\*place\*) means the **usual weather conditions**: this means the



temperature,



precipitation,



sunshine,



cloudiness,



and winds.

**Precipitation** refers to rain, snow, and other forms of falling water. **Different plants grow in different climates all around the world.** For example, some plants like mango, pineapple, and banana, only grow in very warm climates closer to the equator. In Vancouver, we can eat these fruits all year round because they are sent to us from countries around the world by land, sea or air (truck/train, ship or plane). We usually cannot grow them, however, because they need a longer growing season than we have Vancouver and cannot survive our cold winters.

Plants that grow further from the equator or at higher elevations generally don't grow well in very hot climates. Blueberries, radishes, and spinach, for example, like cooler weather. Even in mild or *temperate* climates (\*not too hot and not too cold\*), if the summer gets too hot, these plants do not grow well. It is important to find out what weather is best for a plant and to provide the right conditions to help it grow well.

### Vancouver's Climate

Vancouver and the UBC Farm are located in a ***temperate rainforest***. This means that the weather in the summer does not get too hot and in the winter it does not get too cold, because we are close to the ocean. Also, this area receives 1 to 5 meters of rainfall each year. Imagine if we took the roof off of our classroom and let the rain fill it up for a whole year! The water in the classroom could be over your head or even overflowing the tops of the walls! Vancouver usually does not have freezing temperatures or long periods of time without rain, so many plants can grow here all year round.



**Some important words: Write their meaning on the lines below.**

**Climate:**

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**Temperate Rainforest:**

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## Place of Origin

Where a plant comes from is called its *place of origin*. Did you know that many of the plants we think come from a particular place are not *native* (*\*originally from a specific place\**). Native plants, like salmonberry, fiddlehead fern, salal and thimbleberry have grown in Vancouver for thousands of years and each have a season in which they can be eaten during the spring and summer.



On farms and in gardens in BC's South Coastal Region we grow many plants that are not native to our region, but grow well in our climate if we plant them at the right time (or season) and provide the right conditions of **water**, **light**, and **soil nutrients** (*\*food\**).

Scotch Broom, which grows in Vancouver and Vancouver Island, came originally from Scotland. Potatoes, which have been an important crop in Ireland for hundreds of years, are also native to Central and South America. There are about 5000 different *varieties* (*\*kinds\**) of potatoes with many colours, shapes, and flavours.



## Storing Plants

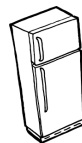
There are fewer *edible plants* (*\*plants we can eat\**) available in the wintertime. We



**dry**



**can,**



**freeze,**



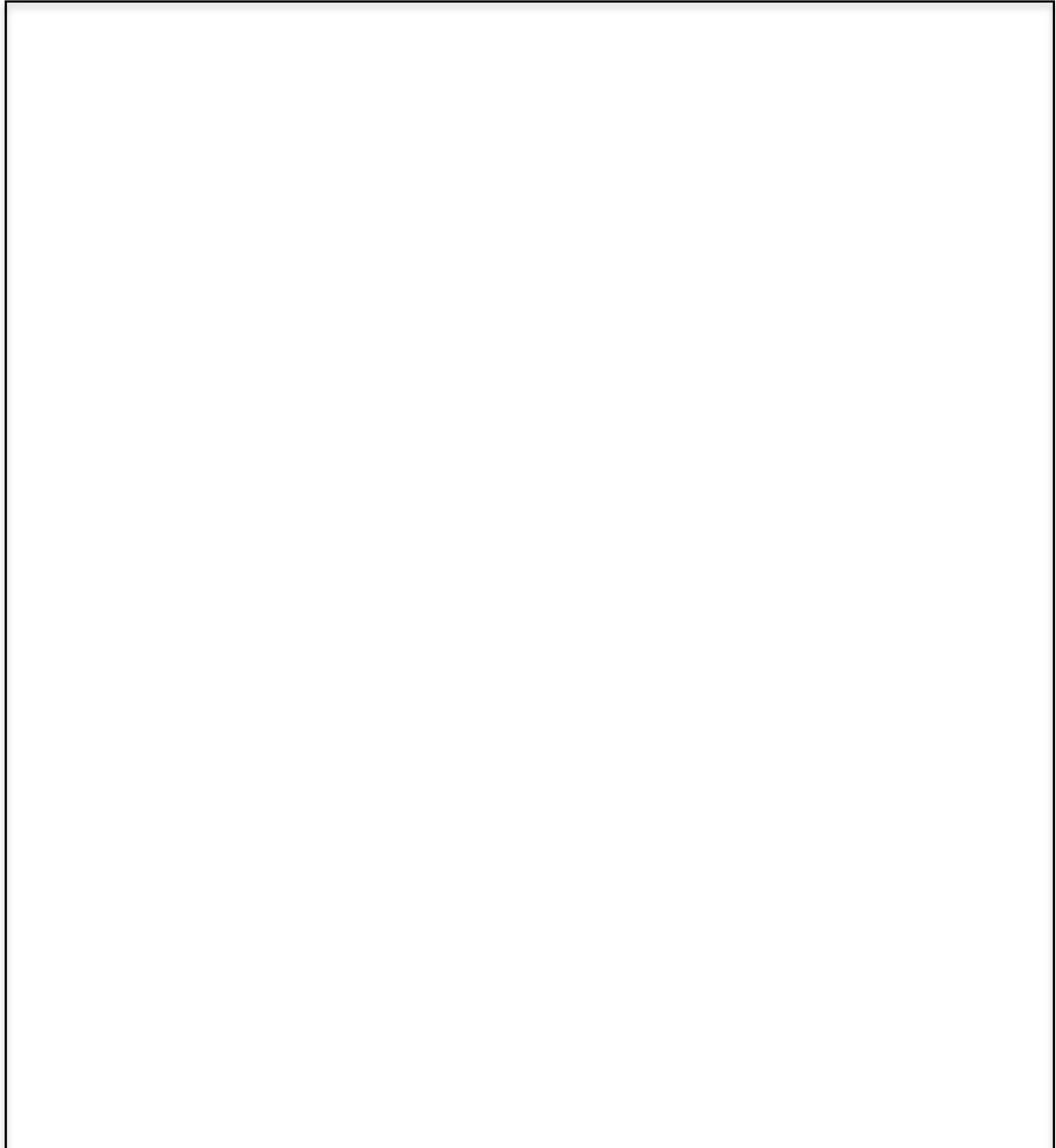
or **store** hardy crops in cool

storage so that our food lasts through the winter.

Before airplanes, ships, and trucks brought food from all over the world to our supermarkets, nearly everyone had to preserve their summer foods to last them through the winter.

Write the name of a plant and the season that it can be planted in our region.  
Draw a picture of it in colour. Try to make it big enough to fill the box.

\*BONUS: Research and write down where that plant comes from originally.



Plant: \_\_\_\_\_ Season: \_\_\_\_\_

Where it is from: \_\_\_\_\_

## VANCOUVER/LOWER MAINLAND'S SEASONS FOR PLANTING AND HARVESTING

As you read the following passage, underline the *crops* (\*plants we grow to eat\*) you can PLANT (or transplant) and *circle* the crops you can HARVEST (\*pick for eating) in each season.



### Fall (late September – middle of November):

**Harvest:** In the fall we harvest ripe fruits and vegetables that have been *maturing* (\*growing \*) all summer. Root crops that we planted in the spring may stay in the ground. We can harvest them through the cooler months to have fresh vegetables. Crop examples: onions, carrots, beans, beets, potatoes, pumpkins, and other squash.

**Grow:** We can plant some crops that will start growing while it's still warm, and then become *dormant* (\*slowed growth, as if sleeping\*) as the days become shorter and colder. These crops will start growing again in the spring when the soil warms, and be harvested in the spring or summer. We also plant cover crops that add nutrients and help protect our soil over the winter. Crop examples: garlic, spinach, pac choi (an Asian green), mescluns (mixes of leafy greens), and cover crops (including field peas, fava beans, alfalfa, and winter rye)



### Late fall and winter (late November – middle of February):

**Soil care:** We let the soil rest by adding mulch and planting cover crop like hairy vetch, broad beans, or field peas, or winter rye.

**Harvest:** We harvest the *cold hardy* (\*tough crops that can survive in the cold\*) crops. Crop examples: sunchokes, chard, other root vegetables like carrots, turnips, and leeks and members of the *Brassica* family, like kale, Brussels sprouts, and cabbage



### **Late winter and early spring (late February - March):**

**Plant:** We plant cold, hardy vegetables. Crop examples: lettuce, spinach, radishes, and peas



### **Spring (late March – middle of June):**

We can plant most of our garden in the spring. Seedlings started in the spring will grow and *mature* (\*get older\*) over the warmer summer months to be harvested as they mature. Since our climate is *moderate* (\*not too hot and not too cold\*), we can grow plants from both cool and warm climates.



**Plant inside:** Plants from warmer climates need help to successfully germinate (\*sprout\*) and produce fruit. If we wait until the soil warms up to plant these “warm weather” seeds, they will not have time to grow and produce fruit before the weather gets cold again. We give these plants extra time to grow by *sowing* (\*planting\*) them in pots inside the greenhouse where it is warmer. Once these *seedlings* (\*young plants\*) have their first leaves and are healthy, we can *transplant* (\*move\*) them into the soil in our garden beds. Crop examples: Broccoli, cauliflower, sunflowers, onions, leeks, and crops in the tomato family should be started inside early in the spring and then transplanted once the weather warms.



**Plant outside:** Crops that can *germinate* (\*sprout\*) in cooler soil can be sown (\*planted\*) directly into the garden at this time. Crop examples: Beans, beets, leeks, turnips, lettuce, and chard can all be planted in the garden.



**Transplant:** Seedlings that are started inside the greenhouse when the weather is cold can be **transplanted** into the ground later in the spring once they have grown healthy leaves and roots.

**Harvest:** The cool loving crops planted in February or March, like spinach, radish, lettuce, and peas, can be harvested now.



### **Summer (late June-mid September):**



**Harvest:** Over the summer people at the UBC farm care for and harvest from all the seedlings we planted in the spring. This includes watering as well as weeding, *thinning* (\*removing extra plants\*), and *pruning* (\*cutting some parts of the plant we don't want\*). Many of the more delicate fruits and vegetables such as strawberries, raspberries, lettuce, beans, and peas are **harvested** almost daily.

Mid-summer (July in Vancouver) is also the time to start planting some of the cooler season crops for a fall/winter garden. Planting in the warmer summer months helps plants will grow large enough to produce food by the fall and winter when their growth slows down. Crop Examples: Peas (to be harvested September or October), and *Brassicas*, like broccoli, cauliflower, kale, and chard (to be harvested early next spring).

Use the Planting Chart for Coastal BC from the West Coast Seeds Catalog to find **Plants that are started INSIDE**

<b>February / March</b>	
<b>April</b>	
<b>May</b>	
<b>June</b>	



Use the Planting Chart for Coastal BC from the West Coast Seeds Catalog to find **Plants that are started OUTSIDE**

<b>February / March</b>	
<b>April</b>	
<b>May</b>	
<b>June</b>	

## Possible Spring Planting Crop List

Name: \_\_\_\_\_

Farm Group Name: \_\_\_\_\_

Look back on *Vancouver/Lower Mainland's Seasons for Planting and Harvesting*.  
Work in your Farm Friend groups, create these lists:

- A list: Select (list) at least 6 vegetables varieties you can plant *and* harvest between March and June
- B list: Select 6 vegetable varieties you can plant in spring (March-June) that will be ready to harvest after June.

You may want to return to this list and add more by looking at the *Crop Variety Characteristics List*.

	A: Plant <i>and</i> harvest between March and June	B: Plant in spring (March-June) and Harvest <b>after</b> June
1		
2		
3		
4		
5		
6		

## What to Plant

We eat different parts of different plants. For some plants we may eat the root and the leaves, while for other plants, we may only eat the seeds. Each fruit or vegetable crop has its own *unique* (\*one of a kind\*) roots, stems, leaves, flowers, and seeds. This means that each plant (like carrot or sunflower) will grow to be a **different size and shape**.

### Root, Shoot, and Fruit Crops

#### **1. Small Root and Leaf Crops (examples: Beets and Radishes or Lettuce and Spinach)**

Small root and leaf crops can be planted fairly close together, about 1 hand width (10cm). The leaves above the ground are about the same size as the root. You will be able to plant a few rows.

#### **2. Shoot Crops (examples: baby lettuce leaves to large broccoli)**

We eat the stems and/or leaves of shoot crops. They can be small or big so some can be planted close together, and others need much more space. When planted close together (2 finger widths), baby lettuce greens will form small, tender leaves. The same variety spaced farther apart (2 hand widths) will develop into large heads like we see in the store. Depending on how big the leaves will be you may be able to plant several rows of these crops, or only a few plants.

#### **3. Fruit and Flower Crops (examples: pole beans and pumpkins or sunflowers and nasturtiums)**

A fruit is the part of the plant that has seeds inside. It does not have to be sweet to be a fruit. Fruits mature after their flower dies. Fruiting crops take the longest time to mature, so you may not get to harvest them this season. Most fruit crops can produce many fruits and may grow to be quite large. Some grow tall and narrow while others may spread out and take up much of your garden space. Pole beans for example, require a trellis (sticks and/or strings to climb on), while bush beans support their own weight but may spread out. Squash plants like zucchini and pumpkins and flowers like nasturtiums may also grow to be quite large (1 or more meters in diameter)! You may only be able to fit one or two of these large crops in your bed.

## Choosing the Right Seeds

### **GREAT SEEDS FOR THE LANDED LEARNING GARDEN**

Ideally, you want to grow quite a few crops that you will get to harvest and enjoy before the end of the school year. You probably already know what some of these are...You're off to a great start if you said:

- **greens** (like spinach, arugula, lettuce, and bok choi)
- **radishes**
- **peas** (especially edible pea pods, like snap peas or snow peas)

### **NOT SUITABLE FOR THE LANDED LEARNING GARDEN**

You already know there are some warm weather crops that won't grow well in our climate. But there are also some crops that *can* be grown that we still avoid growing in the garden. We choose not to grow *perennial* (\*growing year after year\*) crops because they grow bigger each year, making it hard for future gardeners to make changes to the garden. We also choose not to grow crops that are *susceptible to* (\*having a weakness for\*) diseases in the rain.

Here are some crops we avoid in the group beds, but often grow in other gardens to share:

<b>What not to plant</b>	<b>Why not</b>
Rhubarb	perennial & very large, better to grow in a separate garden
Tomatoes, Peppers, Eggplant	susceptible to <i>blight</i> (*a fungal disease*) in rainy climates, better to grow in the greenhouse
Corn	wind pollinated, many plants need to be close together to form corn cobs, better to grow all together in one bed
Melon	Warm weather crop, better to grow in a greenhouse
Perennial herbs (like mint, lemon balm, and oregano)	Can grow quite big over many years, better to grow in a separate garden

**Planting for *Diversity* and Beauty** (\*Planting many different kinds of plants\*)

**Gardens can be designed to be beautiful as well as produce food.** When you plan your garden, look for plants with different shapes, colours, and textures. A mixture of different plants and colours provides a balance of food and nutrients to keep us healthy. Gardens with many different crops are also less likely to be destroyed by disease. There are more than 6000 varieties of potatoes, but in Ireland, most people used to grow only one type of potato, *the Irish Lumper*. When a disease called “blight” attacked this variety of potato between 1845 and 1852, most of the potatoes died. People starved during this “Potato Famine” because they didn’t have enough food to eat!

**Same Plant – Different Variety** When you think of a carrot, what colour do you think of? Everyone knows carrots are orange, but did you know they can also be white or purple? Many crops can have interesting *characteristics* (colours, flavours, or shapes) that we do not see in the grocery store. Look through the West Coast Seed catalogue to explore options for each plant’s characteristics:



- **Root shape:** spherical (round), conical (long and pointy), cylindrical (long and round)



- **Leaf shape:** smooth, ruffled, feathery, split
- **Colour:** green, red, orange, yellow, purple, white, striped
- **Flavour:** sweet, spicy, bitter

**Practice Finding Different Crop Characteristics and Varieties**

In your West Coast Seed Catalogue, work with your group to research which varieties of your favourite crops have the most interesting characteristics.

Crop Name (eg. Carrot) \_\_\_\_\_

Characteristic	Name of Variety
Eg. Colour: Purple	Purple Haze
Eg. Shape: Spherical	Paris Market

## Choosing the Right Seeds

Look at your group's seed lists. Together with your group, pick the crops that you will grow in your garden. Choose crops from the list below that are also on your *Possible Spring Planting Crop List*.

If it is not on the list below, we do not have seeds to grow it.

Circle:

- **2-4 Root Crops:** beet, carrot, parsnip, radish, turnip, potato
- **1-2 Squash Family Crops (Cucurbits):** cucumber, zucchini, pumpkin, other squash
- **0-2 Onion Family Crops (Alliums):** leek, bulb onion, bunching onion (scallion), garlic
- **3-5 Leafy Greens:** lettuce, spinach, tatsoi, arugula, chard, Mesclun mix, amaranth
- **1-2 Cabbage Family Crops (Brassicas):** broccoli, cabbage, cauliflower, kale, Brussels sprouts, kohlrabi
- **1-2 Pea Family (Legumes):** broad beans, bush beans, pole/runner beans, peas
- **1-2 Herbs:** cilantro, parsley, basil
- **1-2 Edible Flowers:** sunflower, nasturtium, calendula
- **0-1 Tomato Family (Nightshades):** ground cherry, tomatillo

## Crop Variety Characteristics List

Find the crops you have circled in *Choosing the Right Seed* and check the box next to each name below. For each crop you have checked, choose **one\*** characteristic that you want that crop to have. (*\*If you chose two varieties, you may check two characteristics.*)

*\*\*Asterisks\*\* below indicates crops you are likely to be able to harvest before the end of the school year.*

<input type="checkbox"/> <b>Amaranth</b> [only one available] <u>Plant:</u> Mar-April (early harvest) <u>Harvest:</u> Apr-Jun (early harvest)
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<input type="checkbox"/> <b>**Arugula</b> [only one available] <u>Plant:</u> Mar-April (early harvest) <u>Harvest:</u> Apr-Jun (early harvest) <div style="margin-left: 20px;"> <input type="radio"/> Spicy and nutty         </div>
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<input type="checkbox"/> <b>Basil</b> [only one available] <u>Plant:</u> April-May <u>Harvest:</u> July-October
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<input type="checkbox"/> <b>Beans (Bush beans)</b> <u>Plant:</u> May-June <u>Harvest:</u> July-August
<b>Colour</b>
<input type="radio"/> Brown
<input type="radio"/> Red
<input type="radio"/> Yellow
<input type="radio"/> Black
<b>Pattern</b>
<input type="radio"/> Uniform
<input type="radio"/> Spotted

<input type="checkbox"/> <b>Beans</b> (pole and runner) <u>Plant:</u> May-June <u>Harvest:</u> July-August
<b>Colour</b>
<input type="radio"/> Green
<input type="radio"/> Yellow
<input type="radio"/> Purple
<b>Texture of pod</b>
<input type="radio"/> Smooth
<input type="radio"/> Fuzzy
<b>Length of pod</b>
<input type="radio"/> Long
<input type="radio"/> Short

<input type="checkbox"/> <b>Beet</b> <u>Plant:</u> April-May (early) OR Jun-Jul (late) <u>Harvest:</u> Jun-Jul (early) OR Sep-Oct (late)
<b>Colour</b>
<input type="radio"/> Red
<input type="radio"/> Yellow
<input type="radio"/> Striped
<b>Shape</b>
<input type="radio"/> Spherical (round)
<input type="radio"/> Cylindrical (long)
<input type="checkbox"/> <b>**Broad beans</b> [only one] <u>Plant:</u> Feb-April OR Oct-Nov (over-wintering) <u>Harvest:</u> Jul OR Apr (over-wintering)

<input type="checkbox"/> <b>Broccoli</b> <u>Plant:</u> March-June <u>Harvest:</u> Jul-Sep OR Feb-Mar (sprouting)
<b>Colour</b>
<input type="radio"/> Green
<input type="radio"/> Purple
<b>Type</b>
<input type="radio"/> Head
<input type="radio"/> Sprouting (many buds)

<input type="checkbox"/> <b>Brussels sprouts [only one]</b> <u>Plant:</u> May-June <u>Harvest:</u> November-December
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<input type="checkbox"/> <b>Cabbage</b> <u>Plant:</u> March-June <u>Harvest:</u> July-September
<b>Colour</b>
<input type="radio"/> Green
<input type="radio"/> Red

<input type="checkbox"/> <b>**Calendula</b> <u>Plant:</u> March-May <u>Harvest:</u> July-September
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<input type="checkbox"/> <b>Carrot</b> <u>Plant:</u> April-June <u>Harvest:</u> July-October
<b>Colour</b>
<input type="radio"/> Orange
<input type="radio"/> Purple
<b>Shape</b>
<input type="radio"/> Spherical (round)
<input type="radio"/> Conical (like most carrots)

<input type="checkbox"/> <b>Cauliflower [only one available]</b> <u>Plant:</u> March-June <u>Harvest:</u> July-September
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<input type="checkbox"/> <b>**Chard</b> <u>Plant:</u> April-June <u>Harvest:</u> June-September
<b>Colour</b>
<input type="radio"/> Red
<input type="radio"/> White
<input type="radio"/> Multi-coloured stems

<input type="checkbox"/> <b>**Cilantro [only one available]</b> <u>Plant:</u> April-May <u>Harvest:</u> July-October
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<input type="checkbox"/> <b>Cucumber</b> <u>Plant:</u> May-June <u>Harvest:</u> July-August
<b>Colour</b>
<input type="radio"/> Green
<input type="radio"/> Yellow
<b>Shape</b>
<input type="radio"/> Spherical (round)
<input type="radio"/> Cylindrical (like most cucs)

<input type="checkbox"/> <b>Ground Cherry [only one]</b> <u>Plant:</u> April <u>Harvest:</u> July-October
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<input type="checkbox"/> <b>**Kale</b> <u>Plant:</u> March-June <u>Harvest:</u> June-September
<b>Colour</b>
<input type="radio"/> Light green
<input type="radio"/> Dark green
<input type="radio"/> Green with purple stem
<b>Texture</b>
<input type="radio"/> Smooth
<input type="radio"/> Frilly



**Leek** [only one available]

Plant: Feb-June

Harvest: August-December

**\*\*Lettuce**

Plant: March-June (cold tolerant)

OR July-Sept (heat tolerant)

Harvest: May-July (cold tolerant)

Or September-November (heat tolerant)

Type

Head lettuce

Leaf lettuce

Colour

Green

Red

Speckled

Seasonality

Cold-hardy

Heat-tolerant

Mix:

One variety

A mixture of varieties

**\*\*Mescluns**

Spiciness

Mild

Spicy

**\*\*Nasturtium**

Plant: March-May

Harvest: July-September

**\*\*Onion**

Plant: Feb-Mar (bulbing) OR April (bunching)

Harvest: July-Sept (bulbing) OR May-July (bunching)

Type

Bulbing

**\*\*Bunching (green)**

**Parsley** [only one available]

Plant: April-May

Harvest: July-October

**Parsnip** [only one available]

Plant: April-June

Harvest: July-October

**\*\*Peas (edible pod)**

Plant: Feb-June

Harvest: June-August

Type

Snow (skinny pod)

Snap (juicier pod)

**Peas (shelling)** [only one]

Plant: Feb-June

Harvest: July-August

**\*\*Potato**

Plant: April-June

Harvest: June-September

Colour

White

Yellow

Pink

**\*\*Radish**

Plant: March-April

Harvest: April-June

Colour

Red

Pink

Black

Mixed

Shape

Spherical (round)

Conical (like most carrots)

<input type="checkbox"/> <b>Soy beans</b> [only one available] <u>Plant:</u> May-June <u>Harvest:</u> September
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<input type="checkbox"/> <b>**Spinach</b> [only one available] <u>Plant:</u> March-April (early harvest) <u>Harvest:</u> April-June (early harvest)
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<input type="checkbox"/> <b>Squash, summer (Zucchini)</b> <u>Plant:</u> Late May-June <u>Harvest:</u> July-August
<b>Colour</b>
<input type="radio"/> Green <input type="radio"/> Yellow
<b>Size</b>
<input type="radio"/> Big <input type="radio"/> Small
<b>Shape</b>
<input type="radio"/> Cylindrical (like most cucumbers) <input type="radio"/> Pear-shaped
<b>Skin</b>
<input type="radio"/> Smooth <input type="radio"/> With ridges

<input type="checkbox"/> <b>Squash, winter (including pumpkin)</b> <u>Plant:</u> Late May-June <u>Harvest:</u> Sept.-October
<b>Colour</b>
<input type="radio"/> Green <input type="radio"/> Orange
<b>Flavour</b>
<input type="radio"/> Very sweet <input type="radio"/> Less sweet
<b>Size</b>
<input type="radio"/> Big <input type="radio"/> Small
<b>Shape</b>
<input type="radio"/> Spherical (round) <input type="radio"/> Pear-shaped
<b>Skin</b>
<input type="radio"/> Smooth <input type="radio"/> With ridges

<input type="checkbox"/> <b>Sunflower</b> <u>Plant:</u> March-May <u>Harvest:</u> July-September
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<input type="checkbox"/> <b>**Tatsoi</b> [only one available] <u>Plant:</u> March-April (early harvest) <u>Harvest:</u> April-June (early harvest)
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<input type="checkbox"/> <b>Tomatillo</b> [only one] <u>Plant:</u> April <u>Harvest:</u> July-October
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<input type="checkbox"/> <b>Turnip</b> <u>Plant:</u> April-July <u>Harvest:</u> June-September
<b>Colour</b>
<input type="radio"/> Purple top <input type="radio"/> White top

## Final Seed List

1. **Crop:** Work together with your team to choose at least 20 crops from the *Crop Variety Characteristics List* that you all want. Write them below. (\*=tomatillo or ground cherry)
2. **Characteristic:** For each crop you wrote below, write down the characteristic (colour, shape...) you checked on the *Crop Variety Characteristic List*.
3. **Variety:** Look up each crop (in the West Coast Seed Catalogue, the internet or a book) to read about and find pictures of the different varieties. Write down the name of a variety that has the characteristic you have chosen. If you want to grow two varieties of the same crop, write that crop name twice, so that each characteristic/variety has its own line.

		Crop	Characteristic	Name of Variety
2-4 Roots	1			
	2			
	3			
	4			
1-2 Cucurbits	5			
	6			
0-2 Onions	7			
	8			
3-5 Greens	9			
	10			
	11			
	12			
	13			
1-2 Brassicas	14			
	15			
1-2 Legumes	16			
	17			
1-2 Herbs	18			
	19			
1-2 Flowers	20			
	21			
*	22			

## BONUS!: COMPANION PLANTING

Plants, like animals, can either help or *hinder* (\*make difficult\*) each other as they grow. Each type of plant needs the right nutrients and conditions to grow and make fruit. Small animals may prefer to eat one type of plant, sometimes becoming a pest to that plant so that it does not grow well. Some plants produce *odours* (\*smells\*) that might attract helpful animals (such as bees, worms, or spiders) or *repel* (\*keep away\*) harmful insects (such as wireworms and cut worms). **When we plant two or more plants near each other so that they help one another grow or produce fruit, this is called companion planting.** Companion is another word for friend, or someone who helps you out.

### The “Three Sisters’ Garden”

Many **First Nations** people throughout North America have traditionally planted **corn, beans, and squash** together because they grow so well together and provide many nutrients that keep people healthy.



**Corn** grows on strong, tall stalks that provide a pole for the bean plants to climb.

**Beans** have special *bacteria* (\*microbes so small that you cannot see them without a microscope\*) on their roots that help “fix” nitrogen in the soil that other plants use.



**Squash** have large leaves that cover the ground, blocking out sunlight, which help keep weeds from growing and keep water from escaping the soil.

Corn, beans, and squash also provide many nutrients that keep people healthy, such as protein, potassium and vitamin C.

## ORIENTATION OF THE SUN AND SHADOWS

All plants need sunlight to make energy and grow. Some plants are very tall, like corn; some are bushy, like squash. We do not want these big plants to block out the sunlight for the smaller plants. For this reason, we plant our gardens so that **big and tall plants are farthest away from the sun’s rays.** Since the sun appears to us in the southern part of the sky, we usually plant big **tall plants on the NORTH side** of the bed.

## Vegetable Companion Chart

From <http://www.gardenguides.com/TipsandTechniques/vcomp.htm>

Plant	Good Companions	Bad Companions
<b>Basil</b>	Pepper, Tomato, Marigold	
<b>Bush Beans</b>	Beets, Cabbage, Carrots, Celery, Corn, Cucumbers, Eggplant, Lettuce, Pea, Radish, Strawberry, Savory, Tansy, Marigold	Onion
<b>Pole Beans</b>	Carrots, Corn Cucumber, Eggplant, Lettuce, Pea, Radish, Savory, Tansy	Beets, Onion
<b>Beets</b>	Bush Beans, Cabbage, Onion, Sage	
<b>Cabbage Family</b>	Bush Beans, Beets, Celery, Onions, Tomato, All Strong Herbs, Marigold, Nasturtium	Strawberry
<b>Carrots</b>	Bush Beans, Pole Beans, Lettuce, Onion, Peas, Radish, Tomato, Sage	Dill
<b>Celery</b>	Bush Beans, Cabbage, Onion, Spinach, Tomato	
<b>Corn</b>	Bush Beans, Pole Beans, Cucumber, Melons, Peas, Squash	Tomato
<b>Cucumbers</b>	Bush Beans, Pole Beans, Corn, Lettuce, Onions, Peas, Radish, Marigold, Nasturtium, Savory	No Strong Herbs
<b>Eggplant</b>	Bush Beans, Pole Beans, Spinach	
<b>Lettuce</b>	Bush Beans, Pole Beans, Carrots, Cucumbers, Onion, Radish, Strawberries	
<b>Melons</b>	Corn, Nasturtium, Radish	
<b>Onion</b>	Beets, Cabbage, Carrots, Celery, Cucumber, Lettuce, Pepper, Squash, Strawberries, Tomato, Savory	Bush Beans, Pole Beans, Peas
<b>Parsley</b>	Tomato	
<b>Peas</b>	Bush Beans, Pole Beans, Carrots, Corn Cucumber, Radish, Turnips	Onion
<b>Pepper</b>	Onion	
<b>Radish</b>	Bush Beans, Pole Beans, Carrots, Cucumber, Lettuce, Melons, Peas, Squash	Hyssop
<b>Spinach</b>	Celery, Eggplant, Cauliflower	
<b>Squash</b>	Corn, Onion, Radish	
<b>Strawberry</b>	Bush Beans, Lettuce, Onion, Spinach	Cabbage
<b>Tomato</b>	Cabbage, Carrots, Celery, Onion, Mint	Corn, Fennel

## Competition: which plants are going to win!?!

Once we know what plants we would like to grow in our garden, it is important to know how big they will grow to be when they are mature to allow enough space for them. If we plant too many seeds in our gardens or plant our seeds too close together, the plants will not have room to grow.

As a plant grows it needs to absorb

1. **sunlight** through its leaves
2. **water** through its roots
3. **nutrients** through its roots

If plants are too close together, they will compete for the things they need to grow and not be as healthy as they should be.