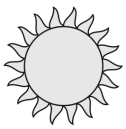
PLANNING TO PLANT YOUR GARDEN

CROP SEASONS (*The time of year and weather in which 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.

Crop Seasons:

Climate:

Temperate Rainforest:

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.

Image by www2.gov.bc.ca

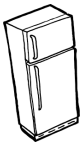
On farms and in gardens in Vancouver and the lower Mainland (part of BC's South Coastal Region) we grow many plants that are not native to our region, but grow well in our climate if we plant them at the right time (or season) and provide the right conditions of **water**, **light**, and **soil *nutrients***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

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

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

Plant: _____ Season: _____

Where it comes 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.

Plant: 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: chard, other root vegetables like carrots, turnips, "sunchokes" and leeks and members of the *Brassica* family, like kale, Brussels sprouts, and cabbage

Late winter and early spring

Plant: We plant cold hardy vegetables. Look at your West Coast Seeds Planting Chart and list all the crops that you can plant in **February or March** here:

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. Look at your West Coast Seeds Planting Chart and list crops you can **start indoors** in **March-June** here:

Direct Seed (plant outdoors): Crops that can *germinate* (*sprout*) in cooler soil can be *directed seeded* (*planted outdoors*) at this time. Look at your West Coast Seeds Planting Chart and list crops you can **start outdoors** in **March-June** here:

Transplant: Seedlings that are started inside the greenhouse when the weather is cold can be *transplanted* (*planted in a new place*) in the ground later in the spring, once they have healthy leaves and roots.

Harvest: The cool loving crops planted in February or March, like spinach, arugula, radish, lettuce, pac choi, arugula, 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 berries, lettuce, beans, and peas are **harvested** almost daily.

Mid-summer (July) is also the time to start **planting** crops that will ripen in the fall and winter. Crop Examples: Peas (to be harvested September or October), and *Brassicas*, like broccoli, cauliflower, kale, and chard (to be harvested next spring).

Fast and Slow Crops

Name: _____Farm Group Name: _____

Some plants are fast! If you plant them in the spring, you will be able to harvest and eat them before school gets out.

Other plants are slow to ripen. Although you might plant them in the spring, you won't be able to harvest them until the fall or winter. Think back to the first time you saw your garden bed in the spring. What was growing then? Do you remember? Many of the crops that were in our gardens in the fall are big plants. They take a long time to get that big, and to make the flowers and fruits we eat.

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

- Fast List: Select (list) at least 6 vegetables varieties you can plant *and* harvest between March and June
- Slow list: Select 6 vegetable varieties you can plant in spring (March-June) that will be ready to harvest in the summer or fall (July-December).

	FAST: Plant *and* harvest in spring (March and June)	SLOW: Plant in spring (March-June) and Harvest in the summer (July-December)
1		
2		
3		
4		
5		
6		

How to Plant Different Kinds of Crops

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 Crops

GREAT CROPS 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:

What not to plant	Why not
Rhubarb	perennial & very large, better to grow in a separate garden
Tomatoes, Peppers, Eggplant	susceptible to *blight* (*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
Garlic	should be planted in fall; will not be harvested until July

Some other crops, like celery and okra, can be grown in Vancouver, but don't grow very well in our gardens.

Same Crop, Different *Characteristics*

Crops can have many different *characteristics* (*colours, flavours, shapes, and sizes*). 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 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, curly, 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: **Ex. Carrot**	**Crop Name:** _____	**Crop Name:** _____
Colour: Purple		
Shape: Spherical		
Flavour: Sweet		

It's exciting to learn about the different characteristics our food crops can have! There are *so many* characteristics that crops can have, however, that it's impossible for us to have seeds for them all!

In your *Group Crop List*, you can choose from the characteristics we will have available to you.

Group Crop List (page 1 of 3)

Step 1: Working together with your group, choose **14-18 crops** to grow in your garden from the *left-hand* column, considering those that are on *Fast and Slow Crops* that you like. Use the numbers on the top left of each section (ex. Pick 2-3) to help you choose the right number of crops to fill your bed.
***Note: Asterisks** indicate crops you may be able to harvest by June.**
Step 2: Once you have chosen all your crops, choose your crop characteristics from the *middle column*. Note: Some crops have only one option
Step 3: Use *right-hand column* when your Farm Friends visit for your seed order.

Root Crops

Pick 2-3	Crop Characteristic	Visit to Plant
☐ **Radish	☐ red ☐ mix of colours ☐ daikon	6, 7, or 8
☐ Beet	☐ red ☐ yellow ☐ striped	8, 9, or 10
☐ Carrot	☐ orange (*conical*) ☐ purple (*conical*) ☐ *spherical* (orange)	7, 8, 9, 10 or 11
☐ Parsnip	☐ [only one available]	7, 8, 9 or 10
☐ Turnip	☐ [only one available]	7, 8, 9 or 10
☐ Kohlrabi	☐ [only one available]	7 or 8
☐ **Potato	☐ white (with pink eyes) ☐ yellow	8

Squash family ("Cucurbits" or *Cucurbitaceae*)

Pick 1-2	Characteristic or Variety	Visit to Plant
☐ Cucumber	☐ cylindrical, green ☐ spherical, yellow	9
☐ Summer Squash (ex. Zucchinni)	☐ Zucchini ☐ Patty pan	9 or 10
☐ Winter Squash (ex. Pumpkin)	☐ Acorn ☐ Butternut ☐ Pumpkin	9 or 10

Group Crop List (page 2 of 3)

Onion family ("Alliums" or *Alliaceae*)

Pick 1-2	Characteristic	Visit to Plant
☐ **Green Onion (Scallion)	☐ [only one available]	7, 8, 9, or 10
☐ Leek	☐ [only one available]	6, 7, or 8
☐ Sweet (Bulb) Onion	☐ [only one available]	6

Leafy Vegetables

Pick 2-3	Characteristic or Variety	Visit to Plant
☐ **Chard	☐ red (stems) ☐ white (stems) ☐ mixed (stem colours)	8, 9, or 10
☐ **Lettuce	☐ green ☐ red ☐ speckled	6, 7, 8, 9, 10, or 11
☐ **Leafy Veg (besides lettuce)	☐ Arugula ☐ Pac choi ☐ Spinach ☐ Tatsoi	6, 7, or 8

Cabbage family-large ("Brassicas" or *Brassicaceae*)

Pick 1-2	Crop Characteristic	Visit to Plant
☐ Brussels sprouts	☐ [only one available]	10
☐ Broccoli or Cauliflower	☐ green ☐ purple ☐ white	6, 7, 8, or 11
☐ Cabbage	☐ red ☐ green	6
☐ **Kale	☐ dark green & smooth ☐ green & frilly ☐ green & purple	6 or 7

Group Crop List (page 3 of 3)

Peas and Beans ("Legumes" or *Fabaceae*)

Pick 1-2	Characteristic or Variety	Visit to Plant
☐ Broad Beans	☐ [only one available]	6
☐ Summer Beans	☐ dry (shelling) ☐ soya ☐ bush (edible pod) ☐ runner ☐ pole	10
☐ **Pea	☐ shelling ☐ snow ☐ snap	6, 7, 8, 9, 10, or 11

Herbs

Pick 1-2	Crop Characteristic	Visit to Plant
☐ Basil	☐ [only one available]	8, 9, or 10
☐ **Cilantro	☐ [only one available]	8, 9, or 10
☐ Dill	☐ [only one available]	8, 9, or 10
☐ **Fennel	☐ [only one available]	8, 9, or 10
☐ Parsley	☐ [only one available]	8, 9, or 10

Edible Flowers

Pick 1-2	Crop Characteristic	Visit to Plant
☐ Calendula	☐ [only one available]	Visit 8 or 9
☐ **Nasturtium	☐ [only one available]	Visit 8 or 9
☐ Sunflower	☐ [only one available]	Visit 8 or 9

Tomato family ("Nightshades" or *Solanaceae*)

Pick 0-1	Crop Characteristic	Visit to Plant
☐ ground cherry	☐ [only one available]	Visit 7

OPTIONAL MATERIAL
PLANTING TIPS: 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.

OPTIONAL MATERIAL

Companion Planting Chart

Adapted from http://www.gardenguides.com/TipsandTechniques/vcomp.htm

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

EARLY FINISHERS ACTIVITIES: Where and When to Plant (page 1 of 2)

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

February / March	
April	
May	
June	

EARLY FINISHERS ACTIVITIES: Where and When to Plant (page 2 of 2)

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

February / March	
April	
May	
June	