**Location**

Chose a location with a minimum of 6 hours of full sun. Sunlight is the motive power for photosynthesis. Every effort must be made to take full advantage of it, especially during the early and late months of the growing season. Also try to trace the path of the sun. It will take a different path, rising and setting farther to the north in summer and to the south in winter. If a wall or building are near the garden it may be in full sunlight now but in the shade later in the year.

Plants need to breathe fresh air. A low area or one with blockage can create no air movement. Stagnant air encourages fungus diseases holds air pollutants and stays colder on frosty nights. Our local area is susceptible to crop loss due to fungal and mold problems.

**Soil**

Our first consideration is the depth of the first layer or topsoil. This is easy to test by digging a hole. The topsoil will appear to be darker and ends when you hit the lighter heaver subsoil. The depth of topsoil will also determine what type of garden will work best. 12 inches is needed for most vegetables. Deeper is needed for the deep rooted vegetables like long carrots or potatoes.

If this is not available a raised garden or containers may have to be used.

A soil sample should be sent to Cornell Cooperative Extension for a complete test. This will show the elements, nutrients, PH, soil type and more.

The best soil for gardens is called sandy loam. This is a term describing the proportions of clay, slit and sand. Clay consists of fine particles the help the soil hold water and store nutrients. Sand consists of larger particles of mostly silicates which keep the soil open for air and water penetration. Silt is somewhere between these two. The fourth ingredient is humus or organic matter that is key to productivity.

A good garden soil should be:

25% air. the roots need air for respiration just like the tops of plants.

25% water the solvent for biological activity and nutrients

45% Mineral Matter made up of small rocks and fragments

5% Organic Matter Accumulation of plant and animal matter.

.Our soil is mostly a clay base. Care must be taken not to work this soil when it is too wet. This will compact the soil leaving it hard with no structure. The soil is ready to work when a sample is squeezed with your hand and still crumbles into small pieces.

**Plants and Planting Times**

Here in New York we have two planting seasons. One for cold weather crops and one for warm weather.

Cold Weather Crops. These are plants that have to be planted in cool weather. All do better in the cold and many benefit from the frost and will not do well in the heat. These include.

Peas Swiss Chard

Leeks Parsnips

Lettuce Endive

Onion Sets Parsnips

Radishes Kohlrabi

Spinach Cabbage

Turnips Broccoli

Beets Cauliflower

Carrots

Warm Weather Crops have to be planted after all dangers of frost and have warmer soil temps of at least 55 degrees. These are:

Corn Pumpkins

Melons Peppers

Cucumbers

Squash

Tomatoes

Asparagus

Eggplant

Varieties that did well at the garden were:

Peas - Super Sugar Snap

 Dark Seed Early Perfection

 Little Marvel

Spinach - Winter Bloomsdale

 Melody

Cabbage - Stone Head

Lettuce - Great Lake Head

 Salad Bowl Red

Cucumber - Marketmore

 Sweet Burpless

Onion Sets - White

 Yellow

Pumpkin - Small Sugar (grew well but had Powdery Mildew problems)

 Big Max

 Jack Be Little

Bean - Provider

 Long Tendergreen

Tomato - Sweet 100

 Sweetie

The cold weather crops can be planted as early as the middle of April and the warm weather crops in the middle of June. As every season is different be sure of the frost dates for the tender crops and do not plant too early.

 **Organic Material**

Organic material not only improves the soil structure and adds and retains nutrients it plays a vital part in the overall life and productivity of the soil. The soil is a living laboratory of many forms of life, including worms, fungi, bacteria and microorganisms. The usefulness of these live creatures depends on the amount of dead vegetation in the soil. Growing crops use these materials so they have to be replenished year after year.

Compost is the caviar of organic material. It is rich in slow release nutrients and water-holding capacity. Other materials include:

Manures – some nutrients, best composted, may contain weed seeds, fresh manure has soluble salts

Grass Clippings – Source of nitrogen when green, breaks down fast

Peat Moss – expensive, acidic, long lasting

Leaf Mold – Composted leaves, improves soil, recycles natural waste

Sawdust – Will take a long time to break down, high carbon to nitrogen ratio, can cause a temporary shortage of nitrogen till it breaks down.

**Planning and Keeping Records**

Make a good garden plan before the garden is even started. List the kinds of plants you want, how far apart and how deep to plant them. Draw up a plan of the garden using graph paper for scale. This way you can tell the space needed and the number of plants.

Here is a general planting guide but there are different methods.

**Vegetable Spacing Depth to plant seed**

**Bean 4 - 6 in. 1 in.**

**Beets 2 - 4 in. 1/2 in.**

**Cabbage 10 - 12 in. 1/4 in.**

**Carrots 2 - 3 in. 1/4 in.**

**Cucumber 8 - 12 in. 1/2 - 1 in.**

**Kale 6 - 8 in. 1/4 in.**

**Lettuce, Head 8 - 10 in. 1/4 in.**

**Lettuce, Leaf 2-3 in. 1/4 in.**

**Onion Sets 2 -3 in. 1/2 of bulb**

**Pea 1 in. 1 in.**

**Peppers 10 in. 1/4 in.**

**Pumpkins 8 - 10 in. 1 in.**

**Radishes 1 in. 1/4 in.**

**Spinach 3 - 4 in. 1/4 in.**

Check the internet or read the seed package for more information on this.

When making plans allow space for walking paths so as to never step into the planted area. Also consider room to move equipment around.

A good water source and maybe tool storage should be thought out and a list of materials is helpful.

Keep good records. You will see the cycles the garden goes thru and be ready for them. For example our pumpkins would come down with a Powdery Mildew problem. I now know it happens in the middle of August when the nights are warm and moist. Now I can be ready and take steps to prevent it. Observation and records are a good way to prevent and be ready for problems. The garden will change every day. Try to notice changes like leaves wilting or changing. Train plants to grow the way you want and when to prune. Learn how to spot nutrient deficiencies.

A garden is work intensive so remember to step back every once and a while and enjoy the living plants.