

1) Plan the garden site:

- **Identify crops** - vegetables, fruits, herbs, flowers, companion plants,
- **Use a Vegetable Planning Chart** – indicates the time of year to plant & transplant into the fields
- **Create a planting chart** – all gardeners are to check off item's plants.
- **Draft a landscape drawing** – include irrigation lines, wind & shade barriers, fence lines, roadways, walking paths, infrastructures, etc.
- **Set up grow rooms** – lights, timers, fans, water lines, etc.
- Use sterile soilless mix to plant seeds, use clean pots and flats etc.
- **Maintenance schedules** – to water, feed, ventilate, transplant, etc.
- **Plant anatomy** – knowing plant anatomy, helps us to grow healthy crops

2) What are your environmental factors to consider?

- Climate zone – temperature range
- Rainfall – irrigation source
- Wind – ventilation sources
- Sunlight or artificial light
- Altitude

3) What is the water source?

- Quality – is it soft or hard, is it a potable (drinkable), is it free of contaminants?
- Quantity – from a river, a lake or pond, a water reservoir, etc.

4) What is the Soil's texture?

- **Texture** - influences drainage.
- **Loam** - is excellent soil found in climates with ample rain and cold winters
- **Sand** - is found in areas near oceans & rivers, water and nutrients drain through sand quickly. Fine, medium or coarse sand particles.
- **Clay** - is "heavy soil with flattened, tiny particles hold moisture and little air.
- **Air space** - allows water to flow and roots to absorb water and nutrients
- **Water**
- **Mineral particles** -
- **Organic matter** – composted soil material
- **Living organisms** – earth worms, mites, nematodes, protozoans, together they form humus that improves soil structure.
- **Soil testing** will confirm the soil Ph and levels of nutrients in the soil
- **Soil amendments** – adding aged manure, peat moss, compost, additional nutrients and materials as per the soil test results.

5) Prepare soil for the field crops:

- a. **Equipment maintenance & operation** – check oil, fuels levels, tires, all over equipment and tools before and after operation.
- b. **Operate equipment and tools with care and caution** – safety first
- c. Remove unwanted weeds with a harrow or use goats early spring, summer and fall.
- d. Use a Disc harrow to loosen soil, a rock bucket, then use a box scraper to fine tune the garden area. (tilling disturbs the soil organisms – earth worms and microorganisms, fungi etc.)

6) Planting crops:

- a. For all crops both greenhouse and field,
 - i. Implement the landscape design,
 - ii. Start staking vegetable row locations,
 - iii. Lay out irrigation lines, set up irrigation timers, repairs and adjustments.
 - iv. Mix soil amendments and add to rows
 - v. Plant seeds and seedlings, label each row - check off on planting chart
 - vi. Irrigate rows according to water schedule – keep seed beds moist,
 - vii. Pest management – watch for aphids, white fly, grasshoppers, carrot & onion fly, cabbage moth, potato beetle, tomato worm, ants, spiders, wasps, etc.
 - viii. Record daily temperature both inside and outside
 - ix. Double check greenhouse temperatures and adjust as required
 - x. Record all activities and communicate with team members,
 - xi. Clean all workspaces, tools and equipment daily
 - xii. Work safely, dress code, take scheduled breaks. Rehydrate self,
 - xiii. Have fun