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Module 10: Garden Ecology

Urban EcoLab

2015

CURes Garden Program - Martha Baldwin

Center for Urban Resilience

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Martha Baldwin Elem School Site Assessment: March 19, 2015

Site 1:

1. Partial Shade area
2. Things need to grow fast (2 months before school is out)
3. Hand watering required
4. Raised beds dry out faster
 - a) Water deeply every few days
 - b) Water in AM or afternoon

Experiment:

Two 4' x 4' raised garden beds
with same plants, different soil:

- Organic Soil
- Miracle Grow Soil



Site 2:

1. Full Sun area
2. Plants will grow faster than in the Shade Garden
3. May need more water



Planting Day: April 3, 2015

Shade Garden - 7 Species of Herbs and Vegetables

Common Name Genus species

1. Lettuce *Lactuca sativa*
2. Spinach *Spinacia oleracea*
3. Broccoli *Brassica oleracea*
4. Kale *Brassica oleracea*
5. Cilantro *Coriandrum sativum*
6. Mexican Oregano *Origanum vulgare*
7. Parsley *Petroselinum crispum*



Sun Garden – 5 Species of Herbs and Vegetables

Common Name Genus species

1. Tomato *Solanum lycopersicum*
2. Bell Peppers *Capsicum annuum*
3. Basil *Ocimum Linnaeus*
4. Greek Oregano *Origanum vulgare*
5. Spicy Basil *Ocimum Linnaeus*





Creating an Edible Shade Garden

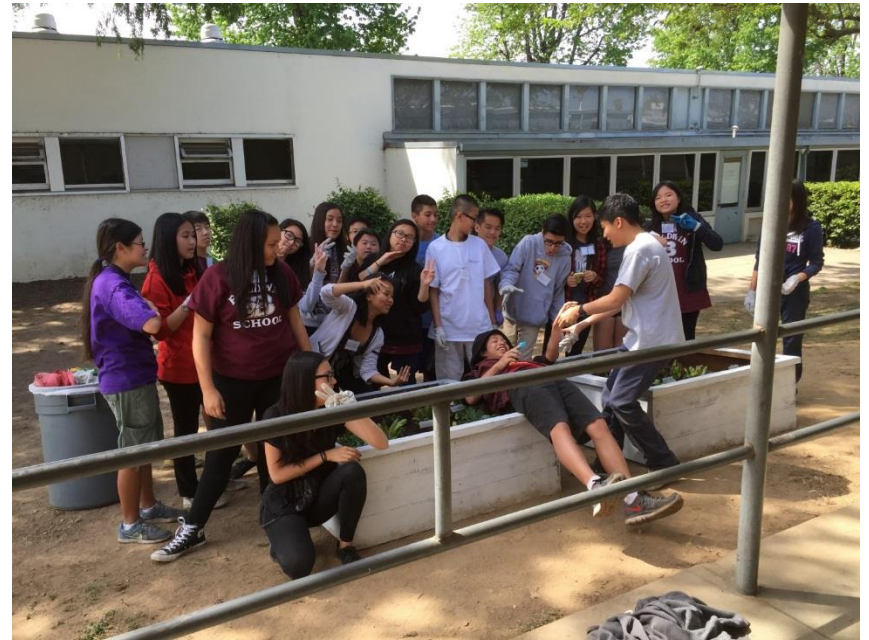
04/03/2015











A photograph of an outdoor courtyard area. On the left, there is a building with large windows and a green picnic table. In the center, a large tree stands near a ramp. To the right, a long building with blue doors and windows is visible. In the foreground, a garden bed with dark mulch contains several potted plants, including tomatoes and basil. A grey trash can and a broom are also present. The text "Creating an Edible Sun Garden" is overlaid in yellow on the left side.

Creating an Edible Sun Garden

04/03/2015



Determining What Kind of Garden Site You Have

Taken from this website: <http://gardening.about.com/od/gardendesign/qt/SunExposure.htm>

Plants usually come labeled with their sun exposure requirements. Measuring sun exposure for plants is not an exact science. There will always be variables such as cloudy days and places where it gets to be 100 degrees in the shade. The definitions below are the generally accepted standards for determining sun exposure in the garden.

1. Full Sun: At least 6 full hours of direct sunlight. Many sun lovers enjoy more than 6 hours per day, but need regular water to endure the heat.
2. Partial Sun / Partial Shade: These 2 terms are often used interchangeably to mean 3 - 6 hours of sun each day, preferably in the morning and early afternoon.- However if a plant is listed as Partial Sun, greater emphasis is put on its receiving the minimal sun requirements.- If a plant is listed as Partial Shade, the plant will need some relief from the intense late afternoon sun, either from shade provided by a nearby tree or planting it on the east side of a building.
3. Dappled Sun: Dappled sunlight is similar to partial shade. It is the sun that makes its way through the branches of a deciduous tree. Woodland plants and underplantings prefer this type of sunlight over even the limited direct exposure they would get from partial shade.
4. Full Shade: Less than 3 hours of direct sunlight each day, with filtered sunlight during the rest of the day. Full shade does not mean no sun. There aren't many plants, except mushrooms, that can survive in the dark.

Shade vs. Sun

When considering which crops to grow in shady areas, think of them in terms of **leaves and roots**. Crops we grow for their **leaves** (kale, lettuce, spinach) and those we grow for their **roots** (beets, carrots, turnips) will do fairly well in partially shady conditions. (The crops we grow for their **fruits** — such as eggplants, peppers and tomatoes — really do need at least six hours of full sun per day.)

Excerpt from: <http://www.motherearthnews.com/organic-gardening/shade-tolerant-vegetables-zm0z11zsto.aspx>

What is Bolting?



ejchang/Flickr/CC BY-SA 2.0

When a plant bolts, it sends up a tall flower stalk in a very short period of time. This means that the plant has gone to seed and will decline in terms of flavor. We generally use this term in relation to vegetable gardening, where plants such as lettuce and spinach are notorious for bolting once the weather gets hot.

<http://organicgardening.about.com/od/organicgardeningglossary/g/bolt.htm>

Vegetables: Foods from Roots, Stems, Bark, and Leaves

The term vegetable refers to many things. Vegetables may be almost any part of a plant including:

1. Roots
2. Stems
3. Leaves
4. Flowers
5. Bark
6. The entire plant

Vegetables have been divided into major groups:

- Edible underground parts, such as roots, tubers, and bulbs.
- Edible above ground parts, such as stems, leaves, and flowers.
- Edible fruits and seeds, such as usually unripe fruits and seeds.

Edible Underground Parts

- Roots, tubers, and bulbs are known as geophytes: plants that have fleshy underground parts that originate from roots, stems, or leaf bases.

Taproots

- Taproots can become swollen and colorful or can remain quite drab but tasty. Examples of common edible taproots include: Carrots, radishes, turnips, beets.



Lewis' bitterroot (*Lewisia rediviva*). Photo by Teresa Prendusi.

Many native North American tap-rooted plants have served as a main staple for existence. Native Americans from the western portions of North America used one such species, Lewis' bitterroot. Roots were often collected and dried for winter use. Roots were then boiled and used as a food source when other food sources were scarce. Roots were also used for medicinal purposes including sore throat aid, poison ivy rashes, and heart pain.

This important plant was introduced to Lewis and Clark on their famous expedition in the early 1800s. Specimens were collected on the expedition and were found to resprout many years after being collected and deprived from soil and water. Named in honor of Lewis and its apparent ability to come back to life, this plant's scientific name is *Lewisia rediviva* (*rediviva* is Latin for "brought back to life").



Segoe Lily (*Calochortus nuttallii*). Photo by Kim Pierson.

Segoe Lily Bulbs Save Pioneers

The Segoe Lily (*Calochortus nuttallii*) was named the state flower of Utah in 1911 for its beauty, importance as a food source, and because of its role in early Utah history. Early settlers or pioneers to the area were starving due to a large infestation of crop eating crickets. Native Americans had used the bulbs as a food source. Bulbs were roasted, boiled, and made into porridge. Early settlers followed this example and were saved from starvation.

Taken from: <http://www.fs.fed.us/wildflowers/ethnobotany/food/vegetables.shtml>

Flowers are Edible?

There are many edible flowers. Some edible flowers are obvious but others are a little harder to detect as truly the flowering structure of a plant. Here are a few favorite flowers or flowering stalks to enjoy:

1. Violets
2. Cauliflower – flowering stalk harvested prior to flowering
3. Capers – often pickled prior to flower opening
4. Cabbage – flowering stalk harvested prior to flowering
5. Dandelion
6. Artichoke
7. Nasturtium
8. Broccoli - flowering stalk harvested prior to flowering
9. Roses



"Broccoli plant" by Rasbak - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons – https://commons.wikimedia.org/wiki/File:Broccoli_plant.jpg#/media/File:Broccoli_plant.jpg

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