

**Big Ideas:**

- A Gardens are places where humans cultivate plants and create an environment for all living things.**
- B In gardens we can grow food in a way that is good for humans and good for the environment.**
- C Healthy gardens imitate the cycles of the natural world and natural ecosystems. Gardens require many living things that all depend on one another.**
- D Gardens require human care.**

**Expanded Content:**

**E Intro to plants**

1. All plants make their own food, using the energy from sunlight (through the process of photosynthesis). Plants are the foundation of the food web (producers). Without plants there would be no food for animals, including humans.
2. During photosynthesis, plants release oxygen for us to breathe.
3. Plants also need water and nutrients from soil to grow and be healthy.
4. Plants have 6 basic parts: Roots, Stems, Leaves, Flowers, Fruit, and Seeds. Each of these parts has a job.

**F Plants life cycles**

1. Some plants must be replanted every year (annuals) and some return every season (perennials). Annual plants make seeds to continue their species as a new generation before they die in the winter. Perennial plants live for two or more years because they can survive the cold winter.
2. Not all seeds are the same. Annual vegetables are planted at different times of year; some seeds must be planted more deeply or closer to the surface; some seeds may be planted close together, others must be given more space.
3. Seeds contain everything they need to grow into a baby plant (seedling), except for water and the proper temperature. When a seed begins to grow, this process is called “germination.”

**G Soil and Compost**

1. Dynamic, living, healthy soil is the foundation for successful large (e.g. farms) and small-scale (e.g. gardens) agriculture.

2. Soil is made of a variety of living and non-living components. The main components are air, water, minerals from rock (sand, silt, and clay), and organic material (plants, insects and microorganisms).

3. Decomposers are organisms that break down organic materials into smaller pieces that plants can absorb.

*See additional details on Soils and Compost Sheet.*

## **H Pollination**

1. Pollination is the transfer of pollen from the anthers to the stigma of the same flower or another flower. When pollination occurs, seeds are fertilized. Many plants respond by beginning to grow fruit.

2. Many living things depend on pollination, including humans. If there was no pollination, there would be no fruit. Fruits are anything with a seed inside. A tomato is a fruit and so is a cucumber!

3. Pollination involves the interdependent relationships of plants and animals. Animals that help to transport pollen are called pollinators. Healthy gardens require active pollinators so that plants will produce fruit and new seeds.

4. Honeybees are important pollinators: one out of every three bites of food we eat has been pollinated by a honey bee. (McGregor, 1976)

*See additional details on Pollination Sheet.*

## **I Garden as food source**

1. Healthy food gives our bodies what they need to grow and stay healthy.

2. Fruits and vegetables should be a large part of what we eat.

*See additional details in Nutrition Sheet.*

## **J Organic Gardening Care**

1. Plants are a reflection of the soil below. If the soil is healthy the plants will be healthy. Our number one goal is to keep the soil healthy. The health and fertility of the soil is maintained through cover crops and adding compost.

2. To protect crops from large pests (deer, groundhogs, squirrels, etc) we build fences, and put out deterrents (e.g. visual: mirrors, smell/taste: pepper sprays) and traps.

3. The use of perennials, companion planting and crop rotations helps prevent insect pests from finding and eating crops. Organic controls and sprays are also used to control insects (not chemical pesticides).

4. Drip irrigation helps reduce water use and prevent the spread of disease in certain crops (e.g. tomatoes).

5. In small scale, sustainable gardens weeds are controlled by hand-weeding and mulching, not chemical herbicides.

**Garden elements and activities:**

Garden element or activity	Description	Age-level appropriate content suggestions			
		K-2	3-5	6-8	9-12
Identify, harvest and taste produce	Identify crops, discuss what part of the plant we eat. When possible, stop to taste samples. Sing plant parts song.	B, E, I	B, E, I	B, E4, I	B, I
Herb garden tour	Touch, smell and taste herbs. Discuss how most herbs are perennial and return every year.	F1, E	F1, E	F1	F1
Beehive observation	Sing honeybee song. Observe hive and discuss the importance of pollination in producing fruits.	H	H	H	H
Sensory garden/ Sudan Grass maze	Engage all five senses, developing comfort in the outdoor garden space.				
Path through the woods	On path through the woods point on diverse plants grow together in nature and there is a natural cycle of nutrients (decomposition) that we imitate in the garden. Older youth, discuss large pests that live in woods.	C	C, G2	G, J2	G, J2
Worm bin/ digging area	Investigate worm bin and/or digging area. For older youth, follow-up with discussion of decomposition/compost and the importance to plants (nutrients).	G	G, J1	G, J1	G, J1

Seeding/Garden Work	Facilitate direct experience with garden processes, usually planting seeds. If older youth, spend time weeding, mulching, or completing other garden task.	D, E1-3, F	D, E1-3, F	D, E1-3, F, J4, J5	D, E1-3, F, J4, J5
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**Materials List:**

Sensory garden

- Sunflower seeds
- Bowl for cotton seeds

Bees

- Honey in easy-squeeze bottle

Garden labor/Planting seeds

- Seeds
- Labels (pre-done or with markers set out)
- Measuring tape
- Other materials as needed for garden work (e.g. weeding baskets)

Harvesting

- Pre-set harvest baskets
- Compost bucket next to washing stations

In-garden tasting station

- Small table
- Knife
- Cutting board
- Bowl of water
- Compost bucket

Worm bin

- Worm bin
- Small paper plates
- Newspaper, food scraps to feed to bin