

PLANT NEEDS

LIGHT: needed for photosynthesis to produce food.

WATER: moves nutrients in and out of plant cells.

NUTRIENTS: provides the energy and materials for plants to grow.

Nutrients include:

- ✓ Nitrogen
- ✓ Phosphorus
- ✓ Potassium
- ✓ Calcium
- ✓ Magnesium

SPACE: is needed to grow

PLANTS PROVIDE

OXYGEN: during photosynthesis plants use carbon dioxide and produce oxygen.

SHELTER: plants can provide protection from the weather and predators. Plants can also provide a home to many organisms.

FOOD: as producers, plants make their own food and they also become food for other organisms .

Plants provide organic matter (when they die) to help build soil. They also protect the soil by keeping it in place.

PLANT USES

FOOD: for other organisms to consume.

FIBRE: used as other materials in a variety of ways (clothing, shelter, paper).

MEDICINE: produced from many different parts of plants, including fruits, leaves, stem (bark), roots and seeds.

FUEL: is provided by plants when plant or plant products are burned.

TRANSPORTATION: plants can be used as vehicles.

SOIL TYPES

Soil is a Natural Resource containing mineral materials and/or organic materials.

SANDY: light brown, made up of minerals, with little or no humus.

CLAY: is very hard when dry with tiny pores between particles. It is made up of minerals with little or no humus

LOAM: dark brown or black, made up of a balance between organic and mineral materials, with many plant nutrients.

MANAGING SOIL

FERTILIZER: nutrients that can replace those removed from the soil by plants .

IRRIGATION: adds water to soil to help plants grow or dissolve nutrients.

CLEARING LAND: removing plant cover making it easier for seeds to germinate and grow.

PLOWING: mixing the different layers of the soil to provide air space and additional nutrients.

FARMING PRACTICES

CROP ROTATION: growing different crops in different sections of the farming land each year.

ZERO TILLAGE: stubble from previous crop helps to keep soil in place and provides organic material in the topsoil.

SHELTERBELTS: rows of trees or vegetation to prevent wind erosion.

VEGETATIVE COVER: to keep soil in place (reducing wind and water erosion).

GROWING ENVIRONMENTS

HYDROPONIC: artificial growing method uses chemical nutrients without soil.

GREENHOUSE: controlled light, temperature, and nutrients.

MONOCULTURE: planting one type of crop (large yields of the same food, but less biodiversity).

SUSTAINABILITY

To maintain living resources by using only what is necessary and replacing them for future use.

ARTIFICIAL REPRODUCTION

Human intervention in the plant reproductive process can create new plant varieties to increase, or improve yields, flavors, uses and specific desirable properties.

Selective Breeding: the process of selecting plants with specific traits allowing only them to reproduce.

Genetic Engineering: single gene is added to a plant cell to provide a specific trait that plant can reproduce.

WEEDS and PESTS

WEEDS and PESTS consume the plant crops needed as a human food source.

They can be controlled with HERBICIDES and PESTICIDES, or other organisms - BIOLOGICAL CONTROL.

USE of these controls can have intended, as well as unintended consequences (something that you did not expect to happen).