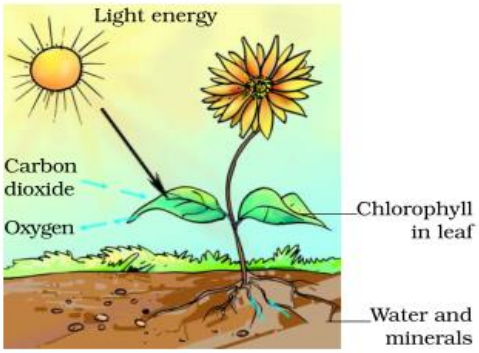
Plants with Unique Adaptations

Plants have physical structures and specialized behaviors that help them survive in their environment. The plant roots, stem, leaves, and flowers all work together to carry out daily activities for survival. Each plant structure does a specific job like absorbing nutrients, providing support, producing food or attracting pollinators for seed production. Plants use these structures and behaviors to adjust or adapt to the conditions in their environment.

How Plants Eat



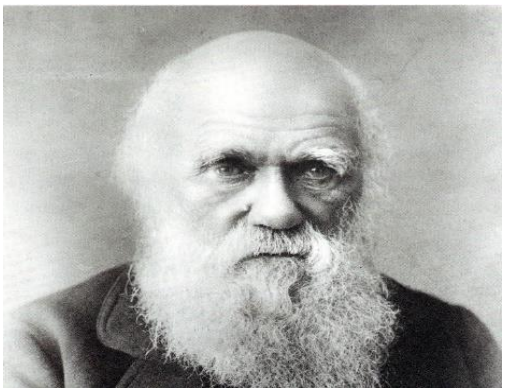
Plants use light energy to make glucose from water, carbon dioxide, and nutrients, this process is called photosynthesis. Green plants contain a pigment called chlorophyll. The Chlorophyll in the plant leaves uses energy from the sun along with water and carbon dioxide to make the glucose sugar that plants need to grow. The water and nutrients necessary to carry on photosynthesis are absorbed from the soil by the roots of the plant. The sweet sugars you taste in a piece of fruit are made through the photosynthesis process.

Plants That Bite Back

Carnivorous plants may be distinguished from other plants by what they eat and the way they eat it. Carnivorous plants, like other green plants carry out photosynthesis for energy. But in addition, they have adapted a special way of supplementing their nutrition. Because the soil that carnivorous plants usually grow in is acidic, nutrients, including nitrogen and phosphorus, are often unavailable to the plant. Carnivorous plants supplement their requirements by trapping and digesting insects. These plants can survive without this nutrient supplement, but they become less hearty and are less able to survive in their environment.

Darwin and the Hairy Leaf

Charles Darwin first wrote a book about carnivorous plants in 1875. Even though few fossil carnivorous plants have been found, scientists learned have a hypothesis that traps evolved with a basic hairy leaf structure that held water. Bacteria in the water caused the trapped insect to rot and so the plant could "eat" by absorbing its nutrients. This adaption was helpful to the plant and evolved into many different traps found in today's carnivorous plants.



Charles Darwin studied plant adaptations.

Do They Eat Their Pollinators?

All these carnivorous plants are also flowering plants, well adapted to living in poor soils. They need pollinators to reproduce and they need prey to supplement their nutrition. The most common pollinator for flowering carnivorous plants is bees and hoverflies. The most common prey of carnivorous plants are gnats, flies, moths, beetles, and ants. Carnivorous plants are both a producer and a consumer, demonstrating interdependence within the ecosystem. So how do they keep from eating the pollinators they need? Carnivorous plants have adapted different ways to help them separate the prey from the pollinator.

- Flowers are high above the ground while the trap is lower on the plant.
- Flowers use white color and nectar to attract certain pollinators, but the trap uses scent and a red color to attract prey.

It is in their evolutionary interest to have physical structures and specialized behaviors to tell the difference between the pollinator and prey.

Conservation: Why You Should Care?

The endangerment and extinction of plants is a problem and threatens our environment. These carnivorous plant species are at risk, because of overcollection, habitat loss and fire suppression.

People are poaching or illegally taking plants from the wild. People can legally produce flytraps in a plant nursery. However, it can be difficult for stores to be certain that their flytraps were propagated legally. Venus flytraps are native in the pine forest ecosystem at Carolina Beach State Park. When humans develop these natural ecosystems into places like neighborhoods farms and roads, these wild plants do not have what they need to survive.

The unique ecosystem at Carolina Beach also depends on disturbances like fire. Park rangers carefully set intentional fires in the forest to maintain the conditions necessary for unique plants like Venus flytraps. We as citizens have a responsibility to protect these unique and special plants.