



## Greenburgh Nature Center

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[www.greenburghnaturecenter.org](http://www.greenburghnaturecenter.org)

### A PLANT'S LIFE (Grades K-2)

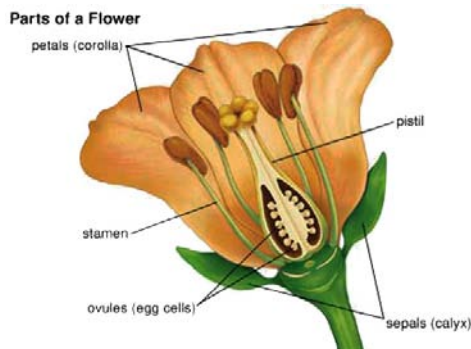
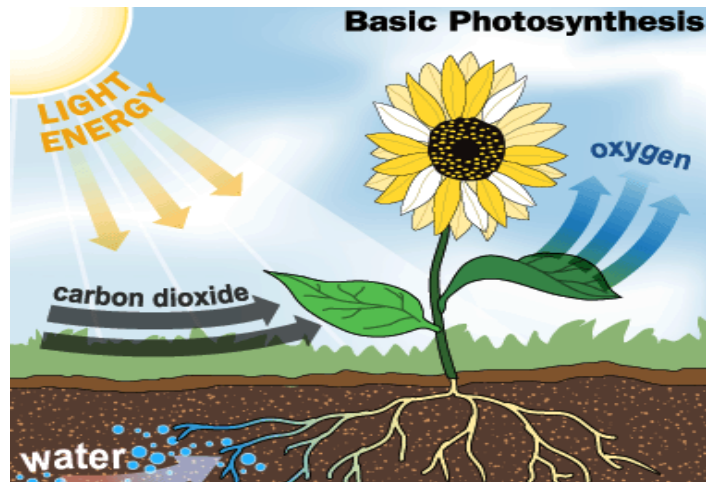
Our greenhouse is the starting point for children to observe the diversity of plant life and understand that plants, like animals, have unique needs and strategies for survival. In every season, an outdoor exploration adds to the understanding of plant ecology.

#### Program Outline: The Basics

Time permitting, the program will include three of the activities listed. Activities are geared to grade level.

#### What do plants need?

Sunlight, Water,  
Air (carbon dioxide),  
Food (soil),  
Temperature



#### What are Flowers?

Seeds  
in  
the making!

#### Activity 1 - Bookmarks

Using **flowers**, leaves, etc., students make a bookmark to take home with them.

or

Transplant umbrella palm  
for class



## Program will include 2 of the following activities

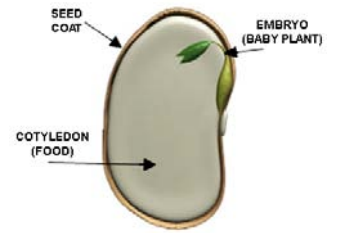
### Activity 2 - Pumpkin Patch

#### Topic - Seeds/Propagation



#### What are seeds?

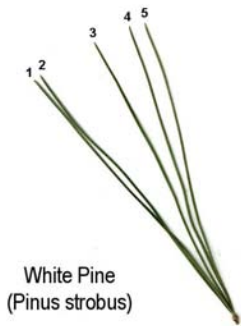
All seeds contain a little plant called an **embryo**. Seeds also contain a small amount of food to nourish the little plant. Seeds are like a spaceship. The seed cover protects the embryo until it finds an appropriate place to grow, while the seed leaves, or cotyledons provide the necessary food energy until roots and true leaves form.



**Activity** - Plant pumpkin seeds in our pumpkin patch (or sustainability garden)

### Activity 3 - Forest Trail Conifers

#### Topic - Leaves



White Pine  
(*Pinus strobus*)

Coniferous trees are also known as evergreens. They have long, thin, waxy needles. The wax gives them some protection from freezing temperatures and from drying out. Evergreens don't lose their leaves in the winter like deciduous trees. They keep their needles all year long. This is so they can start photosynthesis as soon as the weather gets warm. The dark color of evergreen needles allows them to absorb heat from the sun and also helps them start photosynthesis early.



White Oak  
(*Quercus alba*)

Leaves are "expensive" organs for a tree to build and maintain. During winter (in cold climates) or the dry season (in warmer climates) it becomes difficult for the tree to maintain its water balance as there is less free water available in the soil. It is thus difficult for the tree to keep its leaves **turgid** and the cells of the tissues in the leaves would become damaged by the cold in temperate areas, or the heat in warmer areas. Instead of remaining actively growing during this time of the year the tree enters a dormant period.

#### Activity - Compare various leaves with kids

Collect and compare needles and deciduous leaves: evergreen needles - white pine needles 5 per **fascicle**, deciduous leaves - leaves that fall off trees

### Activity 4 - Forest/Gardens

#### Topic - Plants and smells

#### WHY DO PLANTS SMELL?



Plants create fragrance by producing organic compounds on their surfaces. Plants with fragrant flowers produce their perfume in glands on the petals known as osmophores. The reason? **To lure pollinators**. Some plants have scented foliage. The smell comes from water-repellent essential oils manufactured by glandular leaf hairs known as trichomes. The reason? **To repel leaf-eating predators, especially insects**.



Bug-resistant species (fragrant-leaved plants) / pollinator attractor species (fragrant-flowered plants). Examples smell/show pollination: sassafras, onion grass, black birch, black cherry, garlic mustard