

Parts of a Plant : Learning in the Garden

Gardens (60 minutes) | 1st - 2nd | 60 student maximum

About

Students will get their hands dirty with this field trip! They will dissect both a seed and a seedling, separating out the specific parts and reviewing their importance. Using magnifying glasses, they can get a close-up of the plants. Students will get to enter our greenhouse and plant a seed, discussing the requirements for plant survival and growth to complete the life cycle.

Objectives

1. Discover the parts of the plant and their important functions (seeds, roots, stem, leaves, flowers, fruit).
2. Identify the plant life cycle.
3. Understand the requirements for plant survival and growth.

Pre-Visit

Prior to attending the field trip, it is beneficial to review the vocabulary listed and introduce the topics of discussion. We will be walking, dissecting, using magnifying glasses, and exploring our senses. Please share with us additional topics that you are discussing in class, and we will incorporate them if we can.

Overview of the Day

1. Greetings and guidelines
2. Break into preassigned groups of 15-20 students
3. Stations
 - *Dissect a Seed (20 minutes)*
 - Guiding questions: How do you use a magnifying glass? What is the purpose of a seed? What does the seed coat do?
 - Seed dissection to identify the seed coat, cotyledon/food store, and embryo of a bean
 - *Dissect a Seedling (20 minutes)*
 - Guiding questions: Which parts of a plant do you know? What is their job? What would happen if a plant didn't have roots? Why is the flower so important?
 - Seedling dissection to identify the roots, stem, and leaves, and observe flowers as they walk
 - *Plant Life Cycle (20 minutes)*
 - Guiding questions: What do plants need to grow? How does a greenhouse help gardeners?
 - Plant a seed to help future school groups and discuss the plant life cycle

Vocabulary

Cotyledon – the first leaf hidden inside a seed that acts as a food store, helping a baby plant to begin growing

Dissect – to separate into pieces and examine the parts scientifically

Flower – a part of a plant that has petals and grows fruit, often colorful

Fruit – a part of a flowering plant that contains seeds

Greenhouse – an enclosure made typically of glass that helps to grow seeds and young plants by maintaining a constant temperature and climate

Leaf – a part of a plant attached to the stem or branch that resembles a flat structure, is typically green, and absorbs the sunlight

Root – a part of a plant that holds it sturdy and upright, absorbs water and nutrients from the soil, and is typically hidden underground

Seed – a part of a plant that contains the nutrients needed to grow a new plant

Seed coat – the outer protective covering of a seed

Seedling – a young plant grown from a seed

Stem – the main part of a plant that supports the flowers, leaves, and fruits, and also carries water and nutrients to the plant

Standards Covered

1.LS1.1 - *Develop and use a model to explain the structure of plants and describe the function of the parts.*

1.LS1.2 - *Observe and analyze how living organisms grow and change over time.*

1.LS1.3 - *Analyze and interpret data from observations to describe how plants respond to changes in the environment.*

1.LS2.2 - *Obtain and communicate information to classify plants by where they grow and the plant's physical characteristics.*

1.LS2.3 - *Develop and use models to show how plants and animals depend on their surroundings and other living things to meet their needs in the places they live.*

2.ESS1.1 - *Recognize that some of Earth's natural processes are cyclical, while others have a beginning and an end. Some events happen quickly, while others occur slowly over time.*

Post-Visit Book Suggestions

The Amazing Life Cycle of Plants (Kay Barnham & Maddie Frost)

Flower Talk: How Plants Use Color to Communicate (Sara Levine & Masha D'yans)

Oh Say Can You Seed? All About Flower Plants (Bonnie Worth & Aristides Ruiz)

Up in the Garden and Down in the Dirt (Kate Messner)

Seed to Plant (Kristin Baird Rattini)

What Do Roots, Stems, Leaves, and Flowers Do? The World of Plants (Ruth Owen)

Planting a Rainbow (Lois Ehlert)

Background on Cheekwood

Cheekwood is a 55-acre botanical garden and art museum located on the historic Cheek estate. Originally built as the home of Leslie and Mabel Cheek in 1929, Cheekwood is one of the finest examples of an American Country Place Era estate. Since being converted into a museum of art and botanical garden in 1960, Cheekwood has presented world-class art exhibitions, spectacular gardens, and a historic estate unlike anything else.