

Things To  
Remember When  
You Visit

- For the safety of all, please keep hands to yourself.
- Walk, do not run.
- Do not touch objects or exhibit cases unless told otherwise.
- Use indoor voices.
- Stay with the group.
- Follow any extra rules that your Museum Instructor provides.

Vocabulary

Use these words in class discussion, on projects, and in activities!

- Botany: The study of plants.
- Decompose: To rot or decay.
- Decomposer: An organism that help to break down dead plants or animals.
- Photosynthesis: A process by which plants make their food.
- Disperse: To scatter.
- Compost: A mixture of rotted leaves, vegetables, etc. that is added to soil to make it richer.
- Chlorophyll: The green substance in plants that uses light to manufacture food from carbon dioxide and water.
- Transpiration: The process of water movement through a plant and its evaporation from aerial parts (leaves, petals, etc.).

Growing Minds

Lifecycles come alive in this interactive program focused on the study of plants. Students will identify parts of plants, learn about what plants need to survive, and participate in research stations to further understand the growth cycle from soil to seed to plant.



Soil to Seed to Plant is an outdoor Discovery Workshop:

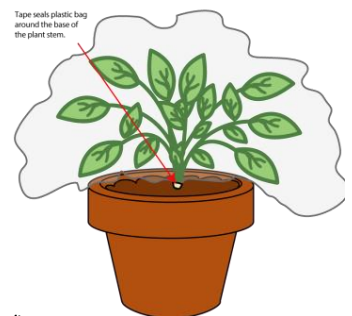
- Please dress appropriately for outdoor weather. Sneakers are encouraged.
- Bug spray and sun screen should be applied seasonally.

Activities to do Before the Field Trip:

Activate prior knowledge by asking students about plants. Can they name parts of a plant? What is the lifecycle of a plant? Why are plants important?

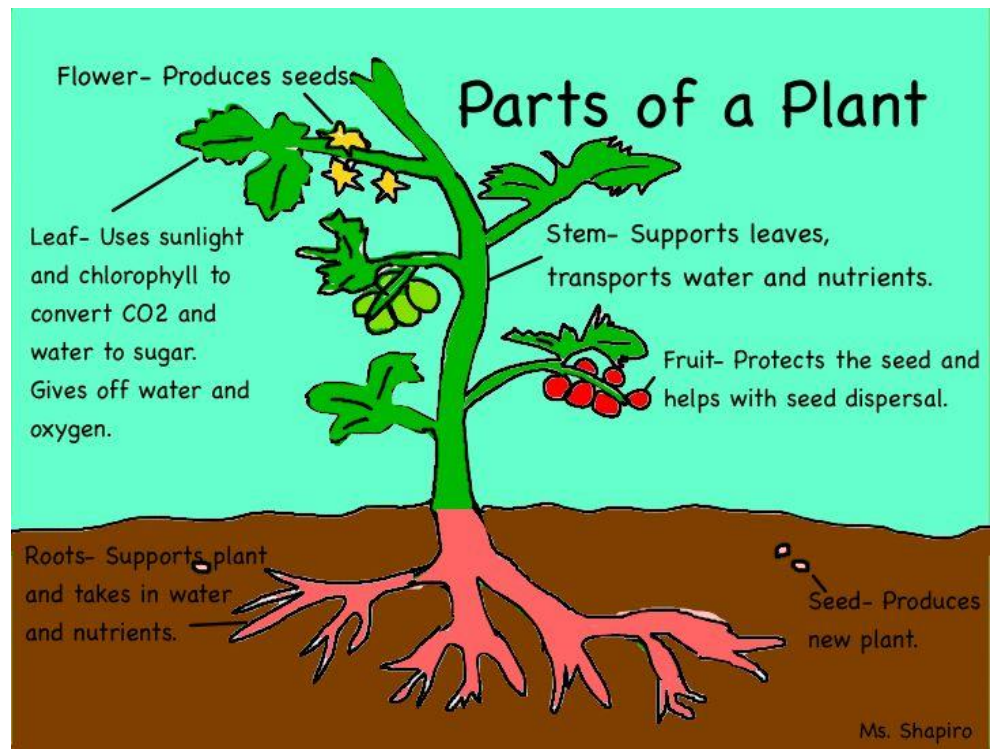
Make a collage of all the different ways plants are used. Have students log the ways they use plants throughout the week. Create a graph representing what is in everyone's lunch - how many students have plants in their diet?

Test Transpiration: Gather six classroom plants and label them. Make sure they are watered well and the soil is sponge-like. Place a plastic bag around each plant and tape it closed around the stem. Weigh the plant and record. Periodically return to the plants and observe what is happening in the plastic bag, weigh the plants, and record findings. Track over the course of a few days and develop a conclusion about how plants process water. (For full procedure visit: <http://www.education.com/print/how-much-water-plants-lose-air/>)



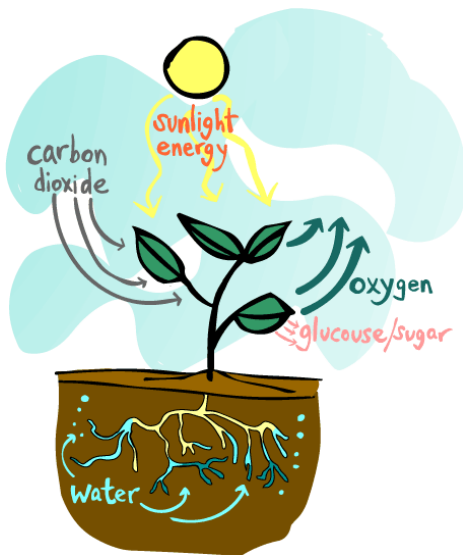
How do seeds travel?

1. Wind- Maple tree seeds have wings to help the wind carry them.
2. Water- Coconuts can float!
3. Animals- Some latch onto fur, others are eaten by animals and deposited in a new place.
4. Mechanical- Some plants release their seeds through pods bursting open and propelling seeds away from the plant.
5. Gravity- Impact from falling off a tree will break the outer coating of some seeds, allowing them to roll away.

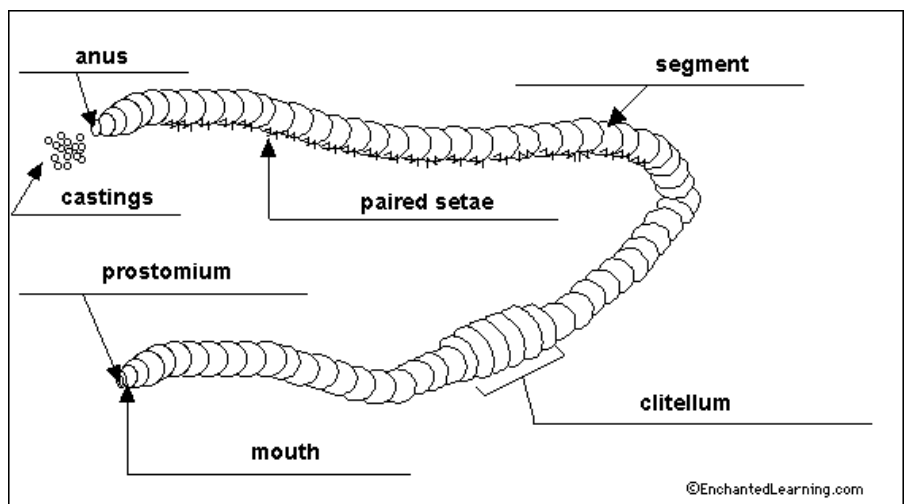


Source: <http://b6cb-resources.blogspot.com/>

Photosynthesis



Earthworm Anatomy



Source: <http://www.sheppardsoftware.com/content/animals/kidscorner/foodchain/photosynthesis.htm>

### Fun Facts

There are over 200,000 different species of flowering plants.

Charles O. Dexter lived where Heritage is now from 1921-1943; he spent his time creating rhododendron hybrids. A favorite rhododendron at Heritage is the *Yellow Gate* located near North American Hydrangea Garden.

Heritage has a Ginkgo tree in the Arbor Bowl. This species has been around since the dinosaurs! Look for leaves that resemble duck feet.

A worm consumes its own weight in plant materials every 24 hours.

### Interdisciplinary Connections

**Math:** Have students hypothesize how many seeds are in a fruit or vegetable. Open it up and have students estimate the number of seeds by counting in one area, then count all the seeds for a final conclusion.

**Science:** Make a worm habitat in your classroom using a large clear container, soil, forest floor materials, and some worms. Worms like it dark, so line your container with black paper or keep it in a dark place. Chart observations. Here's a guide for feeding your worms:  
**YUM:** Fruit or vegetable peelings, cereal, cornmeal, crushed egg shells, and coffee grounds.  
**YUCK:** Bones, meat, mayo, butter, salad dressing, and greasy foods.

### Reflecting on your visit:

**Class Garden:** Plant seeds; you can start with your take home seed from Heritage, and watch them grow. Chart the growth and changes. Experiment with different amounts of sun, water, and sounds to determine the ideal growing conditions.

**Plant Art:** Gather plant products to make a plant identification guide with pressed leaves, flowers, bark, and more. Think about how museums display and label artifacts to help you design your plant guides and content.

**Nature Center:** Designate an area of the classroom, or school, for studying nature. Stock it with binoculars, bug catchers, magnifying glasses, etc. Encourage students to do research, and then go on nature walks to collect specimens for examination. Compare heights and thicknesses of different trees. Dig deeper to uncover the roles insects play in the life cycle of a plant. Create nature journals to document and chart your findings.

### Resources:

#### Books-

**Hands on Nature: Information and Activities for Exploring the Environment with Children**, Edited by Jenepher Lingelbach and Lisa Purcell  
**Worms Eat Our Garbage: Classroom Activities for a Better Environment**, by Mary Appelhof, Mary Frances Fenton and Barbara Loss Harris  
**Access Nature**, by National Wildlife Federation  
**Small Wonders: Nature Education for Young Children**, by Linda Garrett, Hannah Thomas and Hilary Elmer  
**Plant Files: Sprout**, by Discovery Channel School  
**Diary of A Worm**, by Doreen Cronin  
**In a Nutshell**, by Joseph Anthony  
**Plant Packages**, by Susan Blackaby  
**The Tiny Seed**, by Eric Carle  
**Who Will Plant a Tree**, by Jerry Pallotta

#### Online-

**The Adventures of Herman the Worm:**  
[urbanext.illinois.ed/worms/](http://urbanext.illinois.ed/worms/)  
**Plants:** [biology4kids.com](http://biology4kids.com)  
**Environmental Education Supplies:** [acornnaturalist.com](http://acornnaturalist.com)  
**Gardening:** [gardeningwithkids.org](http://gardeningwithkids.org)  
**Nature Education Materials:** [nature-watch.com](http://nature-watch.com)

