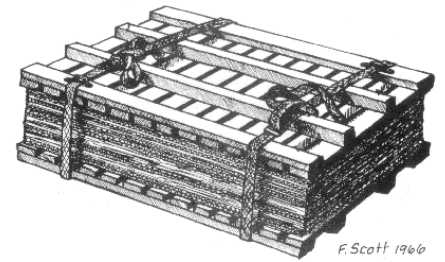


# Travels of a Botanist

## Pre-/Post-Visit Activities



Thank you for registering for the GreenSchool Workshop *Travels of a Botanist*. During this workshop, your students will learn how botanists collect and study plants in the field. Students will also learn about herbaria, make their own plant press, and preserve a live plant specimen. The following selection of pre- and post-visit activity ideas and recommended resources is designed to support 6–8th grade classroom integration of the concepts addressed in *Travels of a Botanist*.

### PRE-VISIT ACTIVITY IDEAS

#### The Scientific Method

Students review the scientific method and practice using it as researchers in the field would do.

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#### Materials:

- whiteboard and markers
  - indoor houseplant or walk outside to observe a tree
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- Review the steps of the scientific method (Refer to Vocabulary Key). Write them out on the board for the class to record.
  - Carefully observe either an indoor houseplant or a plant or tree outside. Have students write down any questions they have about the plant. For example: *Why are the leaves so waxy? Does this plant have any medicinal value? What kinds of animals use this plant for food or shelter?*
  - As a class, choose one question that everybody finds most interesting and brainstorm methods a scientist might use to answer the question. *What*

*kinds of tools would be used to answer the question? Where would a scientist look to find out more information about the plant?*

- If possible, carry out a simple experiment as a class so that students can see the scientific process from start to finish. Explain to the students that the scientific method is how scientists ask and answer questions about nature in the real world.

#### Classification

Students gain a deeper understanding of how classification is used to organize the vast biodiversity of living species.

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#### Materials:

- various fruits or pictures of fruits
  - plastic knives
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- Review the concept of classification (Refer to Vocabulary Key). *How do we use classification in our daily lives to help us keep organized?* For example, how we organize our music on an MP3 player or our clothing for

the different seasons. *How do you think scientists organize the approximately 1.8 million species of plants and animals on Earth?* Taxonomy is the science of classifying plants and animals according to their ancestral relationships.

- Distribute the fruits or pictures of fruits to each table. Working in groups, carefully observe the fruit or pictures of fruit. If using real fruit, cut them open to look inside.
- Each group should decide on a system of organization and then organize the fruits into these categories. If possible, try to guess which fruits are more closely related to each other. Have each group share with the class how they classified their fruits: for example, by size, color, texture, smell, shape. Explain to the class that by classifying the fruits, they organized them into groups that are much easier to work with.
- Compare how each group in the class organized their fruit.

## POST-VISIT ACTIVITY IDEAS

### Plant Identification

Students will learn how to identify plants by examining leaves up close and learning the appropriate botanical terminology used to describe plant characteristics.

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#### Materials:

- collection of leaves and branches with leaves from local trees
- print out of The New York Botanical Garden Leaf and Stem Terminology sheet

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- Ask the class how they think botanists might identify plants they find in the field. Botanists examine plant characteristics as a part of the process of identifying a plant. For example, they look closely at the specific details of leaves to help identify the plant.

- Explain that field guides provide both written descriptions and drawings or photographs to help readers identify the plant. Most field guides use dichotomous keys, a sequence of questions with only two choices, ultimately leading to the name of your plant.

- Hand out a collection of leaves to each table.

- Have the students brainstorm about the leaves they are examining. Write down on the board some of the adjectives they use.

- Hand out the Leaf and Stem Terminology sheet (download from the NYBG Web site.)

- Using the worksheet to help guide them through the technical terms used by botanists, have the students re-examine their leaves.

### Plant Mounting and Herbaria Research

Students will mount their pressed *Alstroemeria* specimens and conduct online research to learn about their classification and botanical information.

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#### Materials:

- cardstock or other thick paper
- gluesticks
- computers with Internet access
- blank herbaria labels
- pressed *Alstroemeria* plants from GreenSchool

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- **NOTE:** Allow the *Alstroemeria* plant specimens to dry in their plant press for 7-10 days.

- Following the steps we did in the GreenSchool workshop, mount the plants onto thick paper. Remember to place the herbarium label onto the mounting paper.

- Have students research the *Alstroemeria* plants scientific classification (i.e., kingdom, phylum, class, etc.) so that they can fill out the blank herbaria labels.

- Students can do further research on *Alstroemeria* and *Viola* plants such as their uses and origins. Online encyclopedias, such as Wikipedia, are recommended.

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### VOCABULARY KEY

#### The Scientific Method

1. Observe something – a living thing, objects, a pattern – and ask a **question** about it.
2. Make a **hypothesis** – what do you predict will be the answer to the question?
3. Plan and carry out an **experiment** to test your hypothesis.
4. Record and think about the **results** from your experiment.

5. Make a **conclusion** about your original question. Was your hypothesis correct? Why or why not?

### Biological or Scientific Classification

- a method by which species of organisms are grouped and categorized. Another name for biological classification is taxonomy.

**Herbarium** - a collection of preserved whole plant or plant part specimens. The specimens may be dried and mounted on sheets, or kept in alcohol or other preservative.

**Field Guide** – a book designed to help identify plants, animals, or other natural objects. Some field guides use simple dichotomous keys. Other field guides are organized by family, color, shape, location or other descriptors.

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### RECOMMENDED TEACHER RESOURCES

Warrs, May Theilgaard. *Tree Finder; A Manual for the Identification of Trees by Their Leaves*. Rochester, N.Y.: Nature Study Guild Publishers, 1998.

Paye, Gabriell DeBear. *Cultural Uses of Plants*, a guide to learning about ethnobotany. Bronx, N.Y.: The New York Botanical Garden Press, 2000.

### RECOMMENDED BOOKS FOR CHILDREN

Barron's; Parramon Editorial Team. *Essential Atlas of Botany*. Hauppauge, N.Y.: The Barron's Educational Series, 2004.

Burnie, David. *Plant*. New York: Dorling Kindersley Limited, 2000.

For more information, call the Manager of School Programs at 718.817.8124.

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## LEAF and STEM TERMINOLOGY

