

# Seed Go-Round:

## Pre-/Post-Visit Activities



### TEACHER GUIDE

Thank you for registering for the *Seed Go-Round* Workshop at the Everett Children's Adventure Garden. During this workshop, your students will investigate how flowers transform into fruits and seeds—which in turn grow into new plants as the cycle continues. The following selection of pre- and post-visit activity ideas and recommended resources is designed to support 2nd-3rd grade classroom integration of the concepts addressed in *Seed Go-Round*.

The activities address New York State Science Standard 1 and New York City Science Performance Standards S1a, S1b, S2a, S2b, S2c, S2d, S5a, S5b, S5f, S7a, S7b, and S8b. Please see the downloadable supplementary vocabulary sheets.

#### PRE-VISIT ACTIVITY IDEAS

##### Seed Travel KWL Chart

Students reflect on the knowledge that they have and would like to have regarding seeds and seed dispersal.

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##### Materials:

- large paper pad
  - marker
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Create a chart on the board with the main heading, "Seeds." Underneath create three columns with the headings: What We Know; What We Would Like to Know; What We Have Learned.

Have a discussion with your students to explore what they know about the life cycle of seeds and how they travel from fruit to the soil.

- *What do seeds need to start growing?*
- *Where in a plant do you find seeds?*
- *Why do seeds travel?*
- *What are some of the ways they travel?*

- *Do you think seeds are nutritious? Why or why not?*

As students share their knowledge of seeds, add their comments to the "What We Know" column.

Explain to them that on their trip to The New York Botanical Garden they will explore seeds. Encourage them to contribute questions about seeds that they might want to investigate. As they list their questions, add them to the "What We Would Like to Know" column.

After the field trip, you can re-visit the chart with your students and fill in the "What We Have Learned" column.

##### Make a Seed Dispersal Flip Book

Students conceptualize some of the different ways in which seeds travel by creating colorful flip books.

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##### Materials:

- paper folded in half (three or four pieces of paper per child)
  - crayons
  - hole puncher
  - yarn
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Encourage your students to think about the different ways that seeds can naturally end up in the ground.

- *Where have you seen a plant grow from the ground on its own (without the help of a gardener)?*
- *How do seeds get planted in the soil if there is not a gardener there to do it?*

Go over any other methods of seed dispersal and tell the children that they are going to create their very own seed dispersal flip books.

Pre-fold three to four pieces of paper in half and nest them into each other to form a booklet. Punch holes along the fold and bind the pages together with yarn.

Distribute the pre-made booklets and direct the children to choose one of the discussed dispersal methods. Have the students illustrate each step of that process on the pages in the book (so that they are in sequence). After they have completed their books, allow them to show and tell each other about their flip books.

## POST-VISIT ACTIVITY IDEAS

### Make a Seed Growth Journal

Students observe the life cycle of a seed to a plant, and make scientific observations and recordings.

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#### Materials:

- crayons
- “Seed Growth Journal” printouts (one per child)
- pencils
- measuring tapes or rulers

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Have the students place the seeds they potted up during their trip to the New York Botanical Garden throughout the classroom.

Initiate a discussion with your students regarding their predictions for the growth of their seeds.

- *What will the seeds need to grow into strong healthy plants?*
- *How will the growth of the plant be affected if it does not get enough sun? If it does not get enough water? If it is talked to? If any other needs are not met?*

Tell your students that they will be acting as scientists to explore these questions. Each day, give students approximately 10-15 minutes to care for their plants and complete their “Seed Growth Journal” printouts. As the plants begin to grow, concentrate your discussions on the changes they observe.

- *What looks different?*
- *What patterns have you noticed in the growth of your plant? How can you explain these?*

### Seed Search

Students use their knowledge of seed dispersal and physical characteristics of seeds to search for actual seeds.

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#### Materials:

- “Seed Search” printouts (one per child)
- glue
- baggies (one per child)
- masking tape or labels
- markers

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Have a discussion with your students about the different types of seed dispersal.

Tell them that they are going to go on a scavenger hunt to gather seeds so that they can create a seed dispersal reference sheet.

Take your students outside or near your school to an area with enough vegetation so that students have a good chance at finding a variety of seeds.

Hand out four baggies to each child and have them use labels and markers to code each bag with the specific dispersal methods – wind, water, exploding, and sticking to animals.

Direct the children to search for seeds to be kept in each of their baggies. Remind them to only take seeds that have already fallen to the ground and to not pick any off trees or plants.

Upon returning to the classroom, have students glue their seeds to the appropriate areas on the “Seed Search” printouts.

If students are unable to find a specific type of seed, encourage them to continue their seed search outside of school time (i.e., when they eat a piece of fruit at home).

## RECOMMENDED TEACHER RESOURCES

**Henry, Peggy.** The Great Seed Mystery for Kids. New York: Avon Books, 1993.

**Jordan, Helene J.** How a Seed Grows. New York: Harper Collins Publishers, 1992.

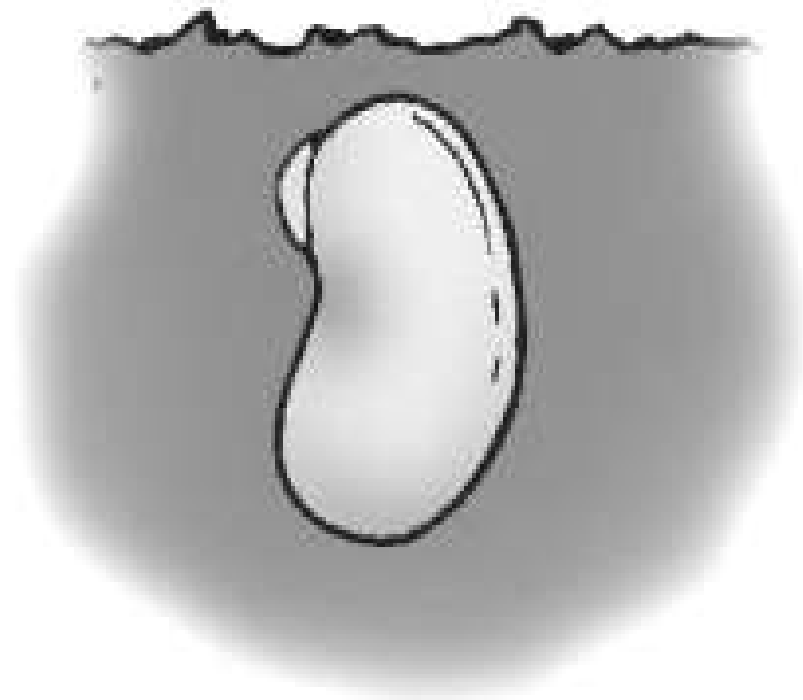
## RECOMMENDED BOOKS FOR CHILDREN

**Lauber, Patricia.** Seeds Pop Stick Glide. New York: Crown Publishers, Inc., 1981.

**Wyatt, Valerie.** Wacky Plant Cycles. New York: Mondo Publishing, 2000.

For more information, call the Coordinator of Family and School Programs in the Everett Children’s Adventure Garden at 718.817.8901.

# My Seed Growth Observation Journal



Name \_\_\_\_\_

Date \_\_\_\_\_

Where is your plant located (i.e., under a tree, next to a fence, etc.)?

\_\_\_\_\_

How much water did you give your plant today?

\_\_\_\_\_

Did you talk to your plant today?

Yes \_\_\_\_\_ No \_\_\_\_\_

The plant is \_\_\_\_\_ inches tall today.

Describe any changes you notice. Why do you think these changes have occurred?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

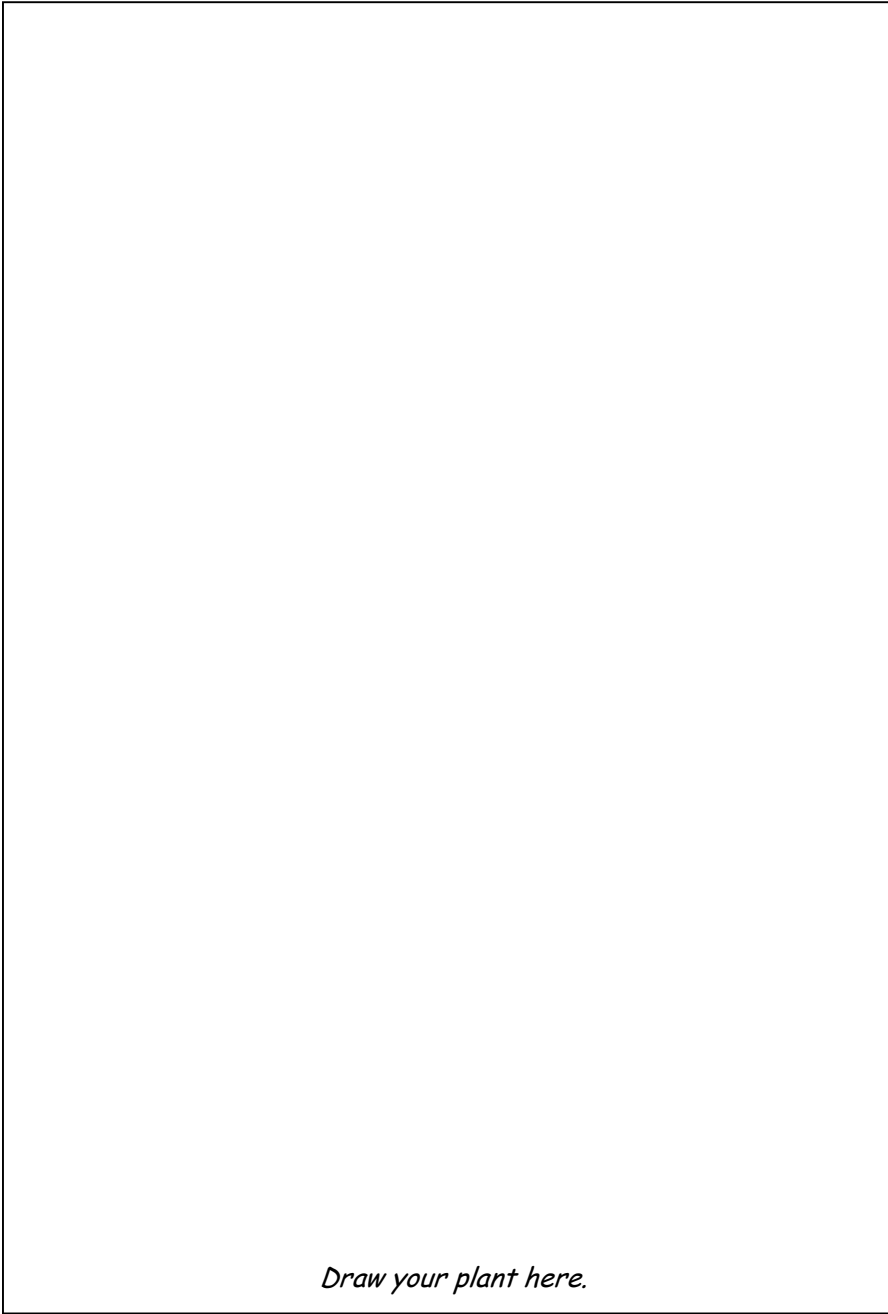
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



*Draw your plant here.*

# Seed Search Reference Sheet

Name \_\_\_\_\_

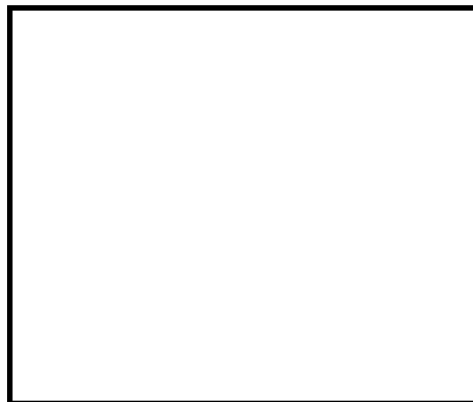
Seeds travel in many different ways! Search for samples of different types of traveling seeds and glue them into the correct boxes.



*floats in the wind*



*floats on the water*



*travels in tummies*



*explodes*



*sticks to animals*

# THE NEW YORK BOTANICAL GARDEN

## *Seed Go-Round*

### **VOCABULARY**

#### **Classification**

The organization of things into a group.

#### **Embryo**

A baby plant found within the seed. This baby plant has leaves and a root.

#### **Fruit**

The part of the plant that contains the seeds.

We eat many fruits, such as apples, cucumbers, eggplant, and oranges. Cattails and maple helicopters are examples of fruits that we don't eat.

#### **Germinate**

To sprout and begin to grow. In order for a seed to germinate, it needs water and the proper temperature.

#### **Hypothesize**

To form an idea based upon some knowledge

#### **Pollination**

The act of transferring pollen from one flower part to another, which is carried out by animals - like bees, butterflies, hummingbirds, or other forces, like wind and water. Pollination allows seeds to develop.

#### **Seed**

The part of a plant that grows into a new plant. Seeds are made up of a seed coat, an embryo and stored food.

#### **Seed coat**

The thin outer layer of a seed that protects the embryo.

#### **Seed dispersal**

The spread of seeds from the parent plant to another place where they can grow.

Here are examples of different methods of seed dispersal: ex:

##### **Explosives**

These seeds pop out when the seedpod springs open (for example: jewelweed).

##### **Floaters**

These seeds disperse by floating away on water (for example: coconuts).

##### **Hitchhikers**

These seeds stick to an animal's fur and may be carried for some distance before falling to the ground (for example: burdock).

### **Tummy Travelers**

These seeds are eaten by animals, along with the fruit, and then excreted (for example: berries).

### **Stored food**

The food contained in a seed that feeds the baby plant (embryo) until it grows above ground and produces its own food.