



PHS

KIDS GROW EXPO



# PLANTING SEEDS.

Quality Seed  
since 1975

# GROWING LIVES.

2010 Kids Grow Expo

April 23, 2010

Temple Ambler Campus

# 2010 Kids Grow Expo

## Planting Seeds. Growing Lives.

April 23, 2010

The Kids Grow Expo is a horticultural exhibition by and for school-age children in the greater Philadelphia region. Sponsored by the Pennsylvania Horticultural Society, the Expo creates an awareness of horticulture and the natural environment and encourages youth to participate in growing, gardening and related activities.

Our theme "Planting Seeds. Growing Lives." focuses on seeds: the tiny miracles that contain all that is needed to produce a sunflower, cabbage, or mighty oak tree. Seeds are energy storehouses that provide the potential for plant life. Seeds are also a major food source, nourishing both humans and animals. Seeds can capture the imaginations of youngsters and spark investigations far beyond growing a bean in a paper cup.

Included in this year's Kids Grow Expo are several classroom projects that will intrigue and inspire classroom gardeners and scientists to explore the mysteries and wonders of the seed.

The Kids Grow Expo partners with Temple University Ambler's EarthFest, allowing youngsters to celebrate Earth Day with a number of activities and interactive displays related to environmental awareness. The Kids Grow Expo is a free event and is held on the Temple Ambler campus. There will be educational exhibits, service learning projects, and competitive classes as part of the Junior Flower Show.

Join us at the 2010 Kids Grow Expo! Be sure to register by filling out the form on page 14.

*The Kids Grow Expo Committee*

For more information about the Kids Grow Expo go to  
<http://www.pennsylvaniahorticulturalsociety.org/events/growexpo.html>

or contact: Flossie Narducci  
Pennsylvania Horticultural Society  
100 North 20<sup>th</sup> Street  
Philadelphia, PA 19103  
215-988-8897

**Location:** Temple University Ambler, Ambler, PA (see directions on page 3)

**Date:** Friday, April 23, 2010  
9:30 am – 2:00 pm

## Table of Contents

Directions to Temple University Ambler Campus .....	3
Registration, Entries and Removal .....	4
Classroom Poster Projects .....	5-11
Artistic Classes .....	11
Horticultural Classes .....	12
Flower Show Terminology .....	13
Pre-Registration Form .....	14

---

### Directions to Temple University Ambler

580 Meetinghouse Rd  
Ambler, PA 19002-3923  
(215) 283-1200

**From Temple U's Main Campus & Points South:** Broad St. north to Cheltenham Ave. (approx. 6 miles). Turn left at Cheltenham Ave. Follow signs to Rte. 309 north (approx. 1.25 miles). Turn right at Rte. 309 and proceed to Susquehanna Rd. exit (approx. 6.5 miles). Turn left on Susquehanna Rd. Proceed ½ mile to Butler Pike. Turn right on Butler Pike. Proceed approx. ½ mile to Meetinghouse Rd. Turn right and proceed approx. ½ mile to Temple University Ambler entrance.

### From Points North via Route 309:

Follow Rte. 309 to Ambler exit. From exit ramp, turn left on Butler Pike, follow Butler Pike approx. ½ mile to Temple University Ambler.

### Public Transportation:

Septa Regional High Speed Lines:

The Paoli-Doylestown line (R5) stops at the Ambler train station and the University provides free bus service to and from Temple University Ambler.

### "94" Bus:

Runs from Germantown Ave. and Bethlehem Pike (end of Chestnut Hill West High Speed line and "23" trolley to the Ambler train station. Free shuttle bus is provided to and from Temple University Ambler.

Temple University Ambler Campus Map

[http://www.temple.edu/maps/documents/TUAmbler\\_map.pdf](http://www.temple.edu/maps/documents/TUAmbler_map.pdf)

## **Registration**

Registration takes place on Wednesday, April 21 from 3:00 to 6:00 p.m. for ALL classes, including the Classroom Poster Projects. To pre-register, please complete the registration form on the last page and return by April 7. (*Entry tags will be mailed only if request is received by April 7.*)

*Entries will be accepted only on Wednesday, April 21 from 3:00 p.m. to 6:00 p.m. and must be brought to the large tent at the site of the Kids Grow Expo at Temple University's Ambler Campus. Every entry **MUST** be accompanied by an ENTRY TAG.*

The Show Committee will take every precaution to insure the safety of all entries, but cannot be held responsible.

## **Entry Rules**

Each exhibitor will be permitted to exhibit only one entry in each artistic and horticultural class. An exhibitor may have more than one entry in a horticultural class if plants are of different varieties.

Each artistic class is limited to a total of 10 entries from each classroom or group. Some horticultural classes are limited. *Follow specific instructions for each class when stated.*

All plants must have been grown by the exhibitor, except in artistic classes. All plants must have been cared for by the exhibitor and grown in the exhibit container for at least two months prior to the Show.

Artificial plant material not permitted. Everything used must be natural. Accessories permitted where specified.

Entries submitted for the Classroom Poster Projects (classes 1-5) must be freestanding. We recommend the heavier tri-fold presentation display boards or using additional support on regular poster boards. The use of heavy objects attached to the poster itself is not advised. The posters should be 36" x 24" or smaller, with the teacher's name, grade, and school on the back side.

## **Judges and Awards**

Only entries that meet class specifications will be judged.

Judging will be by qualified judges.

The Committee has the right to subdivide classes.

The judges' decision will be final.

Ribbons will be awarded to all entries.

## **Removal**

Entries may be removed from the Show between 2:00 p.m. and 3:00 p.m. on Friday April 23. The committee is not responsible for any remaining entries. Entries not picked up by 3:00 p.m. Friday, April 23, will be discarded unless other arrangements have been made.

## Classroom Poster Projects

Class Number: **1**

Class Name: **Reading a Seed packet**

Each packet of seeds provides a wealth of information. It is wise to take the time to read the back of the packet before planting your seeds. Some of the information on the packet is required by law, and other specifics are there to insure your success in your planting project.

**Objective:** Have students identify key information provided on each packet of seeds.

**Subject areas:** Reading, botany, economics, math, geography.

**Activity:** Students learn how to read seed packets and how to determine what seeds will grow in the area they live.

### Materials Needed:

Seed packets

Markers, pens, or crayons

String, yarn & other craft materials

Glue or tape

Poster board

Seed catalogs

### Getting started:

On your display board, identify where the following information can be found on the seed packets.

- This seed packet was for what year?
- What is the specific variety?
- How deeply should the seeds be sown?
- How far apart should the seeds be planted?
- How many days until the seed germinate?
- What date is ideal for planting the seeds in your area?
- How many days until you can harvest?
- Do these plants prefer to be grown in the sun or shade?
- What is the name of the seed company that packaged this seed?
- Draw or describe what the mature plant will look like or how it might be used.

**Going farther:** Why is all of this information important?

### Show your results:

Have the students create a Poster showing where and how they found answers to the questions about reading seed packets. Display the seed packets that were used and indicate where the answers were found. You may include drawings, seeds, seed packet, pictures from seed catalogs, photographs, etc.

---

Class Number: **2**

Class Name: **The Great Seed Race**

**Objective:** Have the students chart the germination of various seeds.

**Subject areas:** science, reading, writing, math.

**Activity:** Students will experiment with various seeds and determine how growing conditions affect germination rates.

**Materials Needed:**

At least 30 seeds

Markers, pens, or crayons

Paper towels

Poster board

Graph paper or plain paper

Clear plastic containers with lids or Ziploc bags

**Getting Started:**

Divide the group/class into 6 teams and give each team at least five seeds of each of the following seeds or whatever seeds are available: Lima beans, Popcorn, Peppers, Sunflowers, or Peanuts (recommended because of large seed size).

The first team will place their seeds in some of the plastic food keepers between sheets of moist paper towels. Set container in a closet, desk drawer or some other location where there is no light.

A second team will put their seeds in a container filled with DRY paper towels. Set container in a closet, desk drawer or some other location where there is no light.

A third team will place their seeds in some of the plastic food keepers between sheets of moist paper towels. Place this container in a very warm location (example: close to a heater).

A fourth team will place their seed in a container between moist paper towels and then put in the refrigerator.

A fifth team will place their seeds in some of the plastic containers between moist paper towels and place in the sunniest location available.

A sixth team will place their seeds between paper towels that have been soaked in Miracle-Gro or another liquid plant food. Set the container in a closet, desk drawer or some other location where there is no light.

Each team will keep daily notes on the progress of this germination research. They will chart daily changes in the seeds and which of their five types of seeds germinate first. Then the teams will compare their notes and make a chart showing all of the teams test results and which saw the fastest germination for each kind of seed.

Discuss these questions with the students.

- Did placing the seed in moist paper towels or soil make a difference? Why do you think this might be?

- Did it make a difference whether the seeds were kept in the dark or were given light? Why?
- Did it make a difference whether the seeds were given plant food before sprouting? Why?
- What difference did temperature make in the time it takes a seed to sprout?
- What conditions were best for a seed to germinate?

**Show your results:**

Have the students create a Poster showing how each team’s seeds performed and how the different climatic conditions affected the results. They should create a chart (bar graph or pie chart) for each type of seed, showing the germination rates for each of the growing conditions they were placed in. You may include drawings, charts, seed samples, pictures from seed catalogs, photographs, etc.

Class Number: **3**

Class Name: **Be a Seed Sleuth**

**Objective:** Have the students discover and identify parts of a seed

**Subject areas:** science

**Activity:** Students will soak bean seeds in water overnight, dissect a seed and identify its parts.

**Materials Needed:**

- |  |              |
|--|--------------|
| Glue   | Paper towels |
| Markers, pens or crayons                                   | Poster board |
| Lima bean seeds and/or black-eyed peas, 3 to 5 per student |              |

**Getting Started:**

Three to five seeds are placed in a glass of water for eight to 24 hours. The seeds are carefully removed from the water and patted dry on a paper towel. The seed coat is carefully peeled away. Then using your fingernail, very carefully, separate the bean seed into two parts.

The inside of the bean is divided into two parts called seed leaves or primary cotyledons. These are food storage for the baby plant. Carefully separate these seed leaves.

At one end of the seed is a tiny plant called the embryo. If you look closely at this, you will see miniature leaves called secondary cotyledons or true leaves.

You will also see the beginnings of a shoot (stem) called the epicotyl. Between the shoot and the root is the transition point called the hypocotyl.

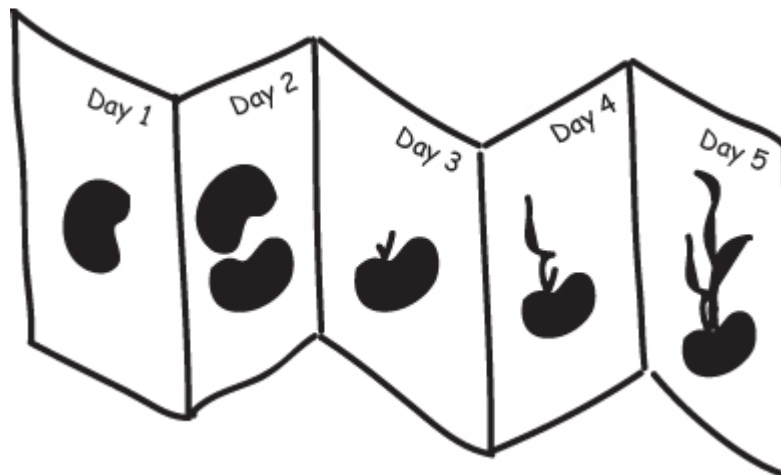
This embryonic root, called the radicle is ready to burst through the scar, similar to your belly button. The belly button on a seed is called the hilum.

Draw a picture of the inside of a bean seed and label the parts.

Leave the seeds in a moist plastic bag for a week, but check them daily and record changes by making new drawings next to your original drawing, or take photos every day. At the end of one week, discuss how the parts of the seed changed.

- Did everyone's seeds change at the same speed?
- Or in the same order?
- What do you think will happen if these seeds are left to continue growing?

Consider making a growth chart to record changes during germination, by folding a long strip of paper like an accordion and clipping it with a paper clip. Draw on one section at a time as the seed grows. When complete, unfold to view the sequence.



If you germinate one seed every day for the next week, you'll end up with all stages of germination at a glance.

**Show your results:**

Have the students create a Poster showing how the seeds looked when split and how they changed from day to day. Students should include their drawings and/or photos of the daily changes in the seeds. You may include charts, seed samples, pictures from seed catalogs, photographs, etc.

---

Class Number: **4**

Class Name: **Tasty Seed Treats**

People eat a lot of seeds. They are nutritious and versatile. They can be grown efficiently and store easily. People in almost every part of the world depend on seeds as their major food source. There is tremendous diversity in the species and varieties of seeds we eat.

**Objective:** Identify seeds that we eat and learn where our foods originated. This activity encourages the discovery and sharing of ethnic food resources, practicing research skills, communication and information sharing.

**Activity:** Class works together to create a list of edible seeds. Research should then be conducted to determine where in the world each type of seed, grain or nut was first grown. Try to track down edible seeds from at least 5 continents.

**Subject areas:** science, geography, nutrition, agriculture, history, sociology, cultural anthropology.

**Materials needed:**

A world map	Glue and tape
Grains, seeds and nuts	Seed catalogues
Research materials: dictionary, library and/or computer access	

**Getting Started:**

Ask students what seeds, nuts and grain they know of that are edible. Make a list of their responses. Divide up the list and ask students to use the library or computer to determine where these seeds originated and find answers to the questions below. They should note the source of where they found the information about the origin of each seed they researched (document, book or website). The class results should be compiled to determine how many worldwide locations were discovered.

Here are a few seeds you might want to start with: Wheat, Popcorn, Beans, Sunflowers, Peanuts, and Walnuts. Can you think of others?

Discuss as a class, the meaning of monocots (e.g., corn and grasses that we eat) and dicots (e.g., bean, pea, tomato). You may choose to include this information on the display board.

**Edible Seed Research:**

- What is the climate where this seed grows well?
- How is this seed planted and grown?
- What tools are used in different cultures?
- What are the nutritional benefits of each seed?
- How do people in different countries or cultures prepare this seed?
- Is there any place in the world where seeds are not the major part of the people's diet?
- Do you eat grass seed for breakfast? (Check the ingredients on the back of your cereal box.)
- Can you think of flavorings that come from a seed? (Hint: vanilla, chocolate, coffee)
- Collect recipes of your favorite dishes that are made from seeds.

**Show your results:**

Have the students create a Poster listing edible seeds. They can also include what country each seed is known to have originated. Students should include drawings, pictures from seed catalogues, and/or photos of the seeds. Include any interesting facts that were discovered in their research for each seed used on the poster. Students can also include recipes using seeds, nuts or grains or compile a cookbook of their favorite "seed" dishes.

Class Number: **5**  
 Class Name: **Seeds in Motion**

Seeds can travel great distances even though they cannot move themselves. Learn how seeds are dispersed and what adaptations enable them to take a journey.

**Objective:** To discover many of the ways seeds travel.

**Subject:** Science, botany.

**Activity:** Students collect seeds to explore various seed dispersal adaptations and modifications.

**Materials:**

- |   |              |
|---|--------------|
| Poster board  | Paper        |
| Markers or crayons  | Glue or tape |
| Magnifying glass  | White socks  |
| Seeds collected from school grounds, home or neighborhood parks |              |

**Getting Started:** Discuss and make a list of adaptations that seem to enable seeds to disperse in different ways. Such as:

Method of travel	Possible seed adaptation	Some examples
stick to animal fur	hooks or barbs	burdock
eaten by bird or other animal and excreted	bright color, tasty fruit	berries, tomatoes
carried by wind	fluff or "parachutes"	dandelions, cattails
floats on water	can float	coconut
flung from parent	spring mechanism	touch-me nots, pansies

Discuss the different mechanisms. When looking at a seed, it's not always evident what its dispersal method is. In many cases, the fruit plays the key part, by luring animals to eat and then excrete seeds. In other cases, tension builds up as fruits dry, causing the fruit to explode violently and expel the seeds.

Now collect your own seeds to study. Take a walk in a meadow or overgrown field, wearing old socks over your shoes. Back in the classroom; use a hand lens to examine the seeds that have "hitchhiked" on the socks. Can you identify the seeds? You may want to collect some of the plant to help in identification.

- Can you think of other travel methods?
- List other seed examples for each of the dispersal methods.
- How might your collected seeds have adapted to insure they can be dispersed?
- Would the number of seeds produced by each plant be helpful in dispersal?
- How many ways do people aid in seed dispersal?
- What would happen if seeds did not travel a distance away from its parent? Imagine a tree dropping all of its seeds directly underneath its branches. How might that effect the ability of each seed to thrive and grow?

Your class might try growing the socks. If so, include the results on your poster.

**Going farther:** Check out a dandelion or another plant about to disperse its seeds and calculate the number of offspring that one plant has produced.

**Show your results:**

List and display the seeds collected on the students' socks. Identify what seeds were collected. Give examples and demonstrate the way in which seeds are able to disperse and methods of travel. Include other discoveries made in your research.

---

**Artistic Classes**

Class Number: **6**

Class Name: **Crafty Creature**

**Seedy Characters.** Make a seedy character using only natural materials such as twigs, nuts, pinecones, etc. and of course, seeds.

Class Number: **7**

Class Name: **Table Setting Arrangement**

**Seed Menu.** Make an arrangement for the dinner table where you would be serving a meal of edible seeds. You can include one or more of the following in your centerpiece: flowers, fruits, foliage, vegetables. You may also include a placemat and place setting.

Class Number: **8**

Class Name: **Number 1 Seed**

**Fresh and/or Dried Flower Arrangement.** Make a flower arrangement of fresh and/or dried flowers, grasses or weeds in an old athletic shoe. You might want to include some seed pods in the arrangement or decorate your container with seeds.

Class Number: **9**

Class Name: **Bird Feeder**

**Birdie Breakfast.** Construct a bird feeder from a recycled plastic bottle that can hold lots of seeds for our feathered friends.

Class Number: **10**

Class Name: **Seed Mosaic**

**Flower Power.** Cut a flower shape out of a piece of cardboard. Create a seed flower by gluing seeds to the shape. You can be as creative as you wish using one or more seed varieties and arranging them in any shape or pattern. Flower shape should not exceed 4" by 6".

Class Number: **11**  
Class Name: **Jewelry**

**Designer Seeds.** Make a piece of jewelry using all natural materials. Your necklace, bracelet, pin or earrings can include seeds, leaves, twigs, nuts, etc.

---

## Horticultural Classes

All plants must be grown or cared for by the exhibitor for a minimum of two months prior to the Show.

Class Number: **12**  
Class Name: **Flowering plant 6" pot & under.** Must be in bloom.

Class Number: **13**  
Class Name: **Flowering plant 6" pot & over.** Must be in bloom.

Class Number: **14**  
Class Name: **Foliage plant 6" pot & under.**

Class Number: **15**  
Class Name: **Foliage plant 6" pot & over**  
Any foliage plant in a pot over 6".

Class Number: **16**  
Class Name: **Container grown vegetable.** One variety to a pot.  
Limit: One per class/group of each variety.

Class Number: **17**  
Class Name: **Cactus and succulents.** Any variety. One plant to a pot.

Class Number: **18**  
Class Name: **Herbs.** Any variety. Specify as culinary, fragrant or medicinal. 1 plant per pot.

Class Number: **19**  
Class Name: **Hanging Basket 6" & under**

Class Number: **20**  
Class Name: **Hanging Basket 6" & over**

Class Number: **21**  
Class Name: **Dish Garden.** An arrangement of three or more plants in a shallow planter, no larger than 15" in diameter. Small figures may be used.

Class Number: **22**  
Class Name: **Terrarium.** An arrangement of three or more plants in a covered container, no larger than 15" in any direction. Limit: 5 entries from each group/class.

Class Number: **23**

Class Name: **Green "n" Growin'**

An established plant propagated and grown by exhibitor for at least two months prior to the Show. (No fruits or vegetables). Means of propagation, other than seed, to be named on entry. (Cutting, air layering, etc.) Limit: 5 entries from each participating group/class. No more than two of each variety.

Class Number: **24**

Class Name: **Kitchen Gardening.**

Sprouting or rooted plants from the kitchen, i.e., root vegetable tops, sweet potatoes, fruit seeds, avocado pits, etc.

---

### **Flower Show Terminology**

**What Is A Class?** A **class** is the numbered category of an entry. (e.g., Crafty Creatures)

**What Is A Grade?** A **grade** determines which age division within the class the entry will go. (e.g. 1<sup>st</sup> grade, 2<sup>nd</sup>, 3<sup>rd</sup>, etc.)

#### **What Is The Difference Between Fresh & Dried?**

**Fresh** is recently cut from a living plant and has not been treated with dye or paint.

**Dried** has been treated in sand, glycerin, borax, or naturally preserved (i.e. hanging upside down, pressed in a book, or storing in a dry dark place.)

#### **What Is Natural?**

**Natural** – Branches, driftwood, bark, stones, shells, seeds, grasses, etc.

**Not Natural** – Paint, dyes, ribbons, macaroni or other manufactured pastas, felt, candy or glitter.

**What Does "Accessories Permitted" Mean?** Accessories are non-plant material additions to the floral design. Keep in mind that the accessories used must be in proportion to the arrangement. (e.g., if the class states that an arrangement should be no larger than 12" in any direction, that means 12" with all accessories in place. Also, accessories are considered extra which means they can be removed without altering the balance and design of the arrangement.

---

Thanks to the committee and staff who helped plan the 2010 Kids Grow Expo!

#### **KGE Committee**

Pamela Snyder, Chair  
Keelin Purcell  
Sylvia Myers  
Doris Stahl

Brendan Petersen  
Peter Hickman  
Larry Stier  
Philip McCabe

Liza Hawley  
Louise Kilderry  
Chuck Lafferty  
Iris Brown, Ex-officio

#### **Staff**

Flossie Narducci, Show Coordinator  
Sally McCabe, Outreach Specialist  
Mindy Maslin, Outreach Specialist  
Anne Vallery, Creative Services Manager  
Bob Felke, Floor Manager

Kay Gramiak, Show Assistant  
Marilyn Reynolds, Outreach Specialist  
Barley VanClief, Outreach Specialist  
Heidi Hiteshue, Project Coordinator

**Pre-registration Form**

We plan to attend EarthFest/Kids Grow Expo on Friday, April 23 and will bring

\_\_\_\_\_ Number of students (approximately)

**Teachers complete a registration form for each class of students:**

Name of Teacher \_\_\_\_\_

Name of School \_\_\_\_\_

School Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_ Zip \_\_\_\_\_

Contact Phone \_\_\_\_\_

Please indicate below the number of entry tags needed for each age division.

<b>Quantity</b>	<b>Age Division and Color Coding</b>		
_____	A	Pink	Up to and including 2 <sup>nd</sup> Grade
_____	B	Orange	3 <sup>rd</sup> through 5 <sup>th</sup> Grade
_____	C	Yellow	6 <sup>th</sup> through 8 <sup>th</sup> Grade
_____	D	Green	9 <sup>th</sup> through 12 <sup>th</sup> Grade
_____	E	Blue	Ungraded Classes

To receive your entry tags prior to event, registration must be received by April 7, 2010.

Mail registration to: Kids Grow Expo  
The Pennsylvania Horticultural Society  
100 North 20<sup>th</sup> Street-5<sup>th</sup> Floor  
Philadelphia, PA 19103  
Attn: Flossie Narducci

Or fax: 215.988.8783