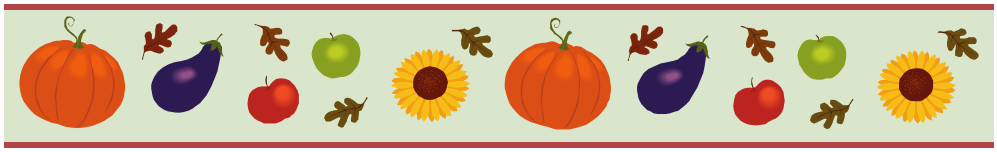
Ready, Set, Grow!

2023 Training Information

A program of 4H, Fairfax and Green Spring Interns and Certified Master Gardeners

for

4th grade classrooms and other groups of 4th grade students in Fairfax County



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The *Ready, Set, Grow!* Leadership Team

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Welcome!

Welcome to the 2023 season for the *Ready, Set, Grow!* program, we are happy to have you with us! The teachers and students of Fairfax County public and private schools are grateful for the time you have committed to teach the *Ready, Set, Grow!* project and they are excited to welcome you and your partner into their classrooms!

This training packet is a hands-on reference guide for new and experienced volunteers alike. Each season the packet is updated to include as much feedback and new ideas as possible from last spring's volunteers, and to incorporate new direction based on teaching practices, change in the SOL's etc. Many thanks for your excellent suggestions and continuing enthusiasm!

There are several reference documents made available to you this year and posted to the RSG Documents section of the FCMGA website at **http://FairfaxGardening.org**:

- **2023 RSG Orientation Guide**. Description of the *Ready, Set, Grow!* program, team information, Frequently Asked Questions and Classroom role play.
- This **2023 RSG Training Guide.** Posted to the RSG Documents section.
- **RSG Botany Refresher.** Posted to the RSG Documents Section. This contains useful information about basic botany as well as some more advanced concepts.
- **RSG Additional Activities.** This guide contains activities that some groups have used in the past in their Ready, Set, Grow! presentations. Available in the RSG Documents Section.
- **PowerPoint slides and other forms are available for you use in the RSG Documents section.**

Administrative Details

Substitution Policy for Volunteers

You are responsible for teaching the *Ready, Set, Grow!* project on the date and time and at the location for which you volunteered. Notify the chair if there are any changes from your original sign-up choices.

If an emergency develops and you are unable to teach the class, first contact your partner and try to arrange an alternate time with the teacher that is mutually agreeable to the three of you. If an alternate time cannot be arranged, it is your responsibility to work with your partner to arrange for a substitute from the other RSG volunteers. A list of volunteers participating in the *Ready, Set, Grow!* project will be distributed via email. Please note that no one is to present a classroom presentation by themselves.

Contact Andrea Bowles, RSG Co-Chair with any changes or questions at 703-505-5417
or email at andreabowles@me.com.

Class Sign Up

Sign up for *Ready, Set, Grow!* classes take place in late February/early March. Prior to that date, RSG partner teams should coordinate to identify potential classes to sign up for. It is important to have several choices in case classes are claimed prior to your signing up.

It is our goal to claim every class registered. We do try to keep registrations to a number that is feasible for our volunteers to cover. However, not all classes requesting the program will be in your neighborhood. We are all volunteers; many of us work and/or have active families and other obligations. Any flexibility you can exercise to help get every registered class claimed will be much appreciated by those teachers and their students.

Note: We strive to cover all classes requested at a given school. If there are schools with multiple classes registered, but not all are claimed, we try to get volunteers to cover the remaining classes. If this is not possible, volunteers may be asked to choose another class at another school. It is better to turn the whole school away than exclude some classes.

Inclement Weather Delays or Cancellations

Inclement weather is always possible in our area! All volunteers are encouraged to do your best to monitor the weather and proactively make adjustments with your partner and the teacher as necessary.

If Fairfax County Public Schools open late or close early, check with the teacher to confirm you will still be able to do your class presentation as scheduled. Reschedule if necessary.

If Fairfax County Public Schools are cancelled for the entire day due to inclement weather, your RSG class presentation is also cancelled and will need to be rescheduled.

Other Class Cancellations

In rare instances, a teacher will need to cancel a class presentation and will not be able to reschedule it. Should this happen to you contact a member of the RSG leadership team as soon as possible. You will not be able to get credit for the missed class.

Class Observers

New volunteers to RSG may wish to observe another team's presentation in a classroom before conducting their first presentation. Please let the RSG Leadership Team know if you would like to observe another team's presentation. All experienced teams registering for classes in March will allow observers.

Observation Guidelines:

- Limit of two people during any class observation.
- Limit of one class observation per person or team.
- There is no limit to how many times a team can volunteer to be observed.
- Time spent observing a class is considered prep time and is not the same as signing-up for/claiming a class and doing your own presentation.
- It is the responsibility of the presenting team to notify the teacher that observers will be present.
- While observing a class, you are a guest first of the teacher and their students, and secondly of the team conducting the presentation.
- To limit unnecessary disruptions and give volunteers the full observation experience, you are expected to arrive early at the school and meet with the presenting team to check-in at the school office before proceeding to the class; then stay for the entire presentation. Do not arrive late.
- Observers are encouraged to bring a camera and take photos of the presenting team interacting with the class. (Refer to the Photos in the Classroom section for more information.)

Intellectual Property

Much time and effort has been put into creating collateral materials such as the PowerPoint slides and handouts. They are the intellectual property of the *Ready, Set, Grow!* project in Fairfax County and are not to be distributed without notifying RSG Leadership and obtaining the permission of the 4-H Youth Coordinator Extension Agent, and Adria Bordas, Horticulture Extension Agent.

While you are encouraged to email teachers pdf documents of handouts (i.e. dissection sheets) to be printed and used with your presentation, you should not email PowerPoint slides or any other documents such as this training guide, etc. Use a memory stick to store the images you plan to use in the classroom, virus scan it beforehand, and give it to the teacher to use with their computer. Don't forget to take it home with you!

Contact the RSG Leadership Team if you're in doubt about sharing or distributing any files or information.

Photos in the Classroom

Teams, and particularly observers, are encouraged to take photos during class presentations of volunteers interacting with the students, of the activities and other props and to share these with the teacher and the RSG Leadership Team. Note that photos sent to the RSG Leadership Team will have limited distribution and be used mostly for recruiting volunteers.

FCPS allows photography in classrooms, and of the students, as long as a release form has been signed by the parent or guardian of a child in the class and their student is not identified by name. (A release form is signed at the beginning of the school year, or when a child transfers in.) If there is a student in the classroom that is not allowed to be photographed, it is best if our volunteers do not take any pictures at all. You should always confirm with the teacher that taking pictures in their classroom is ok. There are some teachers who would prefer that no photos are taken.

Time Reporting

Please use correct procedures when reporting volunteer time for FCMGA and Green Springs:

<u>FCMGA interns/MGs</u>

- Meeting and class presentation time will be tracked and reported by the RSG co-chairs.
- At meetings, if you indicate your round-trip travel time on the sign-in sheet the chair will report this time for you. If you do not, you must self-report your travel time to meetings.
- All additional time is self-reported by you, including travel time to/from class presentations, time meeting with your partner and prep time for classes. **See Individual Time Tracker

<u>Green Spring interns/MG's</u>

- All time spent: meeting, class presentation, travel, prep, etc. must be self-reported using the VMS system.

Communication between You and the Teachers

First Contact

Once the class-sign up period has ended AND **ONLY after the RSG Leadership team has confirmed your class selections by email,** contact your teachers by email to introduce yourself. A sample letter is provided in this packet for reference.

The teachers registered their classes in January and are looking forward to finding out if their class has been claimed by a volunteer team. A RSG Co-Chair will be sending out a notification to all teachers, but it will greatly ease their minds to make contact with YOU shortly thereafter.

Many of the teachers have participated in the *Ready, Set, Grow!* project before and very much value our visits to their schools. Even if they have participated for several years, they are always excited because each volunteer team is different. Teachers new to RSG are excited about your upcoming visit because most have heard from another teacher how great this project is!

Ongoing Communication

Stay in touch with your teacher(s), particularly if their class presentation is scheduled later in the season. (For example: if your class isn't scheduled until April you need to contact your teacher(s) in March shortly after the RSG Leadership Team sends out the email, and again in April to make sure everything is still on track and get information and at least once more to confirm that there haven't been any changes.

If a teacher does not respond to your email or phone messages in a timely manner, or if any other communication issues arise, contact a RSG co-Chair immediately.

Presentation Time in the Classroom

Teachers were advised to allow two (2) hours of uninterrupted time for each class presentation. No breaks, no specials, etc. No exceptions. If your experience is different please let a co-chair know.

If there is a fire drill (which does happen), or other unscheduled and unannounced event that occurs, do your best to go with the flow. Remember, core information and activities have priority over anything optional.

We expect that all the teachers will be actively engaged with you and their students during your presentation, but sometimes that is not the case. If that happens to you, please contact the RSG Leadership Team.

Substitute Teachers

Substitute teachers are not allowed. No exceptions. Teachers needing a substitute for their class are required to notify their team as soon as possible and if possible, arrange a mutually agreeable alternate date & time for the presentation.

Note: Both the two-hour uninterrupted timeframe and not allowing substitute teachers is for the benefit of all RSG volunteers. No volunteer or team should independently make the decision to deviate from these guidelines.

Your Classroom Presentation and Lesson Plan

Purpose

The goal of the *Ready, Set, Grow*! project and your lesson plan is to increase student's knowledge of basic plant anatomy, life processes and the importance of plants to people and the environment through interactive and fun ways. Note that we are not *teaching* children the material but *enriching* the instruction they receive from their teachers.

Resources That Guide Our Instruction

1. 2018 Virginia Standards of Learning (SOLs) set by The Virginia Department of Education and Fairfax County Public Schools (FCPS); and

2. Training and information provided by the Virginia and Fairfax Cooperative Extension offices, in cooperation with Virginia Polytechnic Institute and State University (Virginia Tech) and Virginia State University; in particular, the Master Gardener Handbook: A Guide to Gardening in Virginia (pub 426-600).

The following is the primary section of the 2018 Virginia Science Standards of Learning (SOLs) for Grade Four Science applicable to *Ready, Set, Grow!*:

(The complete 2018 Grade Four Standards of Learning (SOLs) for Science are available on the Virginia Department of Education website at: https://www.doe.virginia.gov/teaching-learning-assessment/k-12-standards-instruction/science/standards-of-learning)

Living Systems and Processes

4.2 The student will investigate and understand that plants and animals have structures that distinguish them from one another and play vital roles in their ability to survive. Key ideas include

the survival of plants and animals depends on photosynthesis;

plants and animals have different structures and processes for obtaining energy; and

plants and animals have different structures and processes for creating offspring.

Central Idea: Plants and animals have different processes and structures that allow them to carry out life processes such as obtaining energy and reproducing.

Vertical Alignment: In third grade, students are introduced to the concept that organisms have both physical features and behaviors that help them to survive in their environment (3.4). The process of photosynthesis is expanded in Life Science to include the energy transfer between sunlight and chlorophyll and the transformation of water and carbon dioxide into sugar and oxygen (LS.4). In addition, students build on their understanding of how adaptations to the specific biotic and abiotic conditions within their environment make them better able them to survive (LS.11).

Enduring Understandings	Essential Knowledge and Processes
Organisms are composed of parts that function as a system to carry out life processes such as obtaining energy and reproducing. • Green plants produce their own food through the process of photosynthesis. They use the green pigment, chlorophyll, along with carbon dioxide, water, and sunlight to produce food (sugar). The leaf is the primary food-producing part of these plants. Oxygen is released during photosynthesis (4.2 a, b). • Photosynthesis enables plants to trap energy from the sun and convert it into sugar that can be used by organisms (4.2 a). • Because animals are not capable of producing their own food, they must consume other organisms to meet their energy needs. Animals have different methods that help them get food (4.2 b). • For many green plants, there are anatomical structures that perform basic functions. Roots anchor the plants and take water and nutrients from the soil. Stems provide support and allow movement of water and nutrients. Leaves are the primary sites for photosynthesis. Flowers are the reproductive structures (4.2 b). • For a population to thrive, its members must be able to reproduce (4.2 c). • Most plants reproduce with seeds which are formed in the reproductive process of flowering plants. Pollination is the process by which pollen is transferred from the stamen (male reproductive structure) to the pistil (female reproductive structure). This transfer can occur as a result of wind, water, or animals. Scents and colors of flowers are attractive to certain pollinators (4.2 c). *Students are not responsible for naming the male or female reproductive structures of the flower*. • Animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction (4.2 c). *Students are not responsible for knowing specific reproductive structures or the process of animal reproduction.*	In order to meet this standard, it is expected that students will • explain the critical role of photosynthesis in the survival of plants and animals within an ecosystem (4.2 a) • create a model or diagram illustrating the parts of a plant in terms of obtaining energy; explain the role of roots, stems, and leaves (4.2 a, b) • plan and conduct an investigation to determine how the amount of sunlight a plant receives affects plant growth (4.2 b) • compare methods by which plants and animals obtain energy and describe how these processes are related (4.2 b) • compare plant characteristics used for attracting pollinators (4.2 c) • create and explain a model of a flower, illustrating the parts of the flower and its reproductive processes (4.2 c) • understand that for animal populations to survive, the animals must be able to successfully reproduce (4.2 c).

What Other Resources are Available to RSG Volunteers?

Whether you are new to RSG, or a returning volunteer, you have many resources available to educate and support you and help you succeed …

- Ready, Set, Grow! reference documents posted to the RSG Documents section of the FCMGA website at http://FairfaxGardening.org.
- Many additional materials are posted on the RSG website page including PowerPoint slides, handouts and other documents.
- Supplies for the Build a Plant, Planting and Living Seed Necklace exercises will be distributed to each team after the training meetings.

If you have a question or need that cannot be addressed by any of the above, please reach out to the RSG leadership team.

General Information about Supplies

Provided Supplies

Supplies for the following core activities are provided:

- Build a Plant: tissue, construction paper, chenille stems and pompoms;
- Planting exercise: soil, peat pots, nasturtium seeds, bush bean seeds, craft sticks, plastic bags and "Caring for Your Seed" instructions sheets; and
- Living Seed Necklace: cotton balls, yarn, plastic bags, seeds and an instruction sheet.

You will receive enough supplies for each class. Please check them prior to the class to ensure nothing is missing. If you would like additional supplies, please contact one of the leadership team members to see if additional supplies are available and arrange for a pickup. We don't want to waste supplies, nor do we want our volunteers to spend money when these supplies are available.

Supplies Not Provided

Teams choosing to use illustration boards will need to purchase their own boards as well as provide supplies for any activities they choose to do in the classroom beyond the core activities. It is not necessary, nor is it encouraged, for volunteers to spend more money than is necessary. Illustration boards are a typically a one-time purchase. If handled with care boards can last for many years.

To reduce the expense for our volunteers, numerous PowerPoint slides have been created and are posted to the RSG Documents section. They can be used in lieu of, or in addition to, illustration boards or other props, as well as numerous handouts. Copy costs cannot be reimbursed so we suggest you email any handouts to the teacher in advance and ask them to print them for the class.

Core Information to Include in All Presentations

Your classroom presentation will reinforce materials most students have already studied. The topics below represent the core information every *Ready, Set, Grow!* presentation must contain.

1. About 4-H
2. Photosynthesis
3. Plant Structure (roots, stem, leaves, flower, fruit and seed)
4. Reproduction Processes and Structures (pollinations and type of pollinators)
5. Germination and Dormancy
6. Life Cycle of a Plant

Text for each topic in the preceding outline is provided on the following pages. This information can be rephrased to make it comfortable for each team. However, you must ensure the overall content is included in your presentation. Throughout are various illustrations and boxes with information tips.

About 4-H

4-H educates young people in a "learn by doing" manner so they have the opportunity to experience hands-on activities in a variety of project areas.

Ready, Set, Grow! is a 4-H school enrichment project especially for 4th grade students.

Membership is open to all boys and girls, ages 5-18 years old and the 4-H year runs from October of one year to September of the next year.

4-H has community, project and Cloverbud clubs available in Fairfax County, the *Ready, Set, Grow!* project, some special interest workshops, a fair and summer camp.

The 4-H's are: Head, Heart, Hands and Health.

The 4-H Pledge … I pledge:

My HEAD to clearer thinking,
My HEART to greater loyalty,
My HANDS to larger service, and
My HEALTH to better living for my club, my community, my country, and my world.

Use and show the PowerPoint slides and/or brochure to the students while talking about 4-H then give the brochure to the teacher along with the listing of 4-H clubs.

Both the club listing and pamphlet were included in your supply bag and are posted to the RSG Documents section.

Don't forget to highlight the summer camp in Front Royal, VA!

Why Study Plants?

This is an excellent verbal brainstorming activity to engage the students, get them thinking about plants and all the ways plants impact and improve their lives. Typical responses include:

- Plants provide food for people, animals and bugs;
- Medicine;
- Shelter – trees for lumber, bamboo flooring etc.);
- Clothing –made from cotton or bamboo;
- Beauty;
- Hobbies;
- Fuel (biofuel for machinery, for heating/energy, etc.); and
- Oxygen to breathe.

Quick & easy:
Write responses on the chalkboard.

Photosynthesis

Photosynthesis is the way plants use the energy from sunlight to produce sugar, which they use for food.

- Photosynthesis — Photo: from the Greek, meaning light + Synthesis: from the Greek, meaning putting together.
- Chlorophyll – a green pigment in the leaves that absorbs energy from the sun.
- The leaves have tiny holes or pores on the underside of the leaf that open and take in carbon dioxide gas (CO_2) and some oxygen (O_2). These pores are called Stoma (singular) or stomata (plural).
    - The stoma or stomata are responsible for gas and water exchange. The stomata take in air containing carbon dioxide and oxygen, which goes through photosynthesis and respiration (metabolic) processes then oxygen is released back through the stomata and into the air.

Tip:

Use a visual aid such as an illustration board, picture or PowerPoint slides.

Make a leaf prop out of a green sponge.
Glue green foam on the top of the sponge and draw veins on the foam to look like the top of the leaf.
The dots on the underside represent the stomata. The sponge(s) can be passed around the classroom.

- Plants also need water (H_2O) to make their own food.
- Leaves use the sun's energy, CO_2 and water to produce a type of sugar, which is stored as starch, for energy.
- Sugar is what the plants "eat". The waste that is left over is oxygen which the plant releases.
- Although not a direct component in photosynthesis, temperature is an important factor.
    - Photosynthesis occurs at its highest rate in the temperature range of 65 – 85 degrees Fahrenheit and decreases when the temperature is below or above this range.

Recap: photosynthesis is the process of sunlight + water + carbon dioxide + chlorophyll = energy + oxygen. The chemical equation for this is $6H_2O + 6CO_2 \rightarrow C_6H_{12}O_6 + 6O_2$.

Plant Structure

Use an illustration board, pictures, PowerPoint slides or a vegetable basket to review each of the plant parts.
Ask students if they have ever eaten the various plant parts.

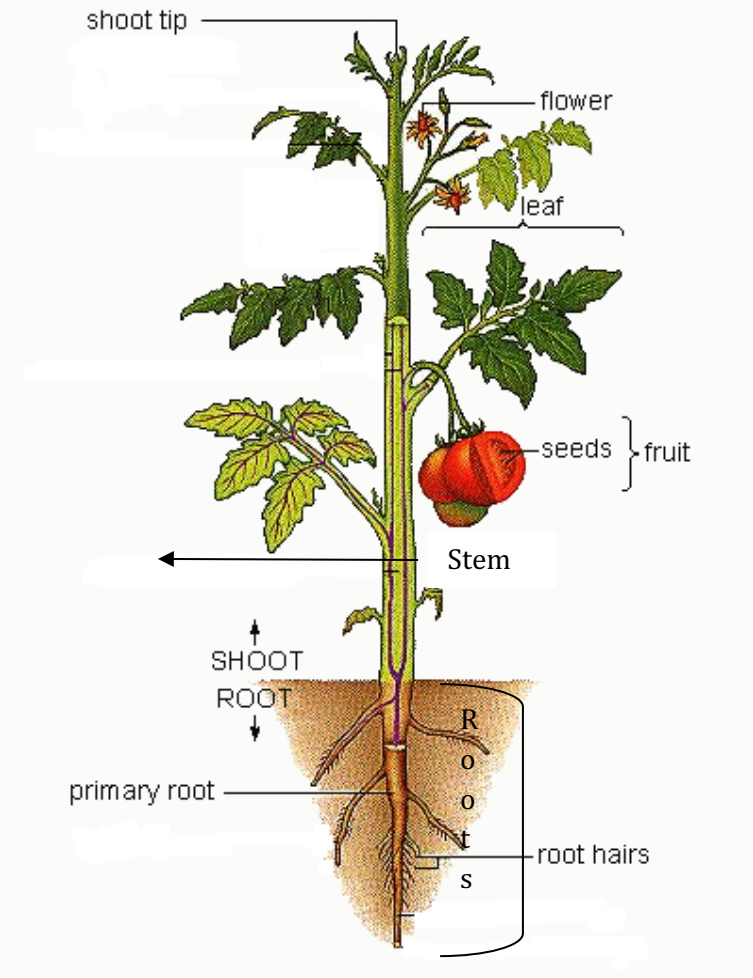


Diagram from http://sdces.sdstate.edu/Brown/beghortplantpartsguide.pdf and modified by S. Roesner. (Link no longer active.)

Roots

Roots are important to a plant because:

- They absorb water and nutrients;
- Anchor the plant to the ground so the plant doesn't fall over;
- Furnish physical support for the stem;
- Store extra food; and
- In some plants they may be used as a means of propagation.

[Examples: Carrots, turnips, beets, radishes, etc.)

Stem

The stem is important to a plant because it:

- Absorbs water and nutrients;
- Provides support;
- Acts as the transportation system for the plant, allowing the movement of water and nutrients up from the roots to other parts of the plant; and
- It helps hold the leaves up to the sun.

[Examples: Celery, asparagus, broccoli, rhubarb, scallions, sugar cane, etc.]

Leaves

Leaves are important to a plant because:

- That's where most of the food production, photosynthesis, takes place because of their special structure.
- Provide a climbing and resting place for various pollinators; and
- Store food.

[Examples: Spinach, lettuce, cabbage, tea, herbs, kale, watercress, etc.]

Flower

The sole function of the flower is sexual reproduction, or to make more plants. Its beauty and fragrance attract pollinators to ensure the continuance of the plant species.

- Pistil – the female part of the flower and consists of three (3) pieces.
  - The pistil looks like a bowling pin with a thicker tube-like stem in the middle (the style);
  - a round or star-like piece at the top that has a sticky feel (the stigma);
  - and at the bottom of the style is the ovary.
  - The ovary contains the eggs which reside in the ovules.
  - Once the egg is fertilized the ovule develops into a seed.
- Stamen – the male part of the flower.
  - Usually the stamen looks like a long thin stem (the filament) with a fat tip (the anther) and is covered with powder or fuzz which is the pollen.
  - An easy way to remember that this is the male part of the flower is to look at the name … stamen has the word "men" in it.

Note: not all plants have flowers with female and male parts.

- Petal – the colorful part of the flower.
  - Sometimes there are leaves that are colorful and are called bracts like on a poinsettia.
  - The petals and bracts are colorful to attract pollinators like bees and birds so the flower will get pollinated.
  - In addition to attracting various pollinators to the flower, the petals also serve as a place for them to crawl and land on. (Not all pollinators hover like hummingbirds.)

- Sepal – the "green leaf-like thing" at the bottom of the flower that protects new buds.
    - The collective term for the sepals is the calyx.

A quick and easy acronym to remember these flower parts is P.S. P. S. (Pistil, stamen, petal, sepal)

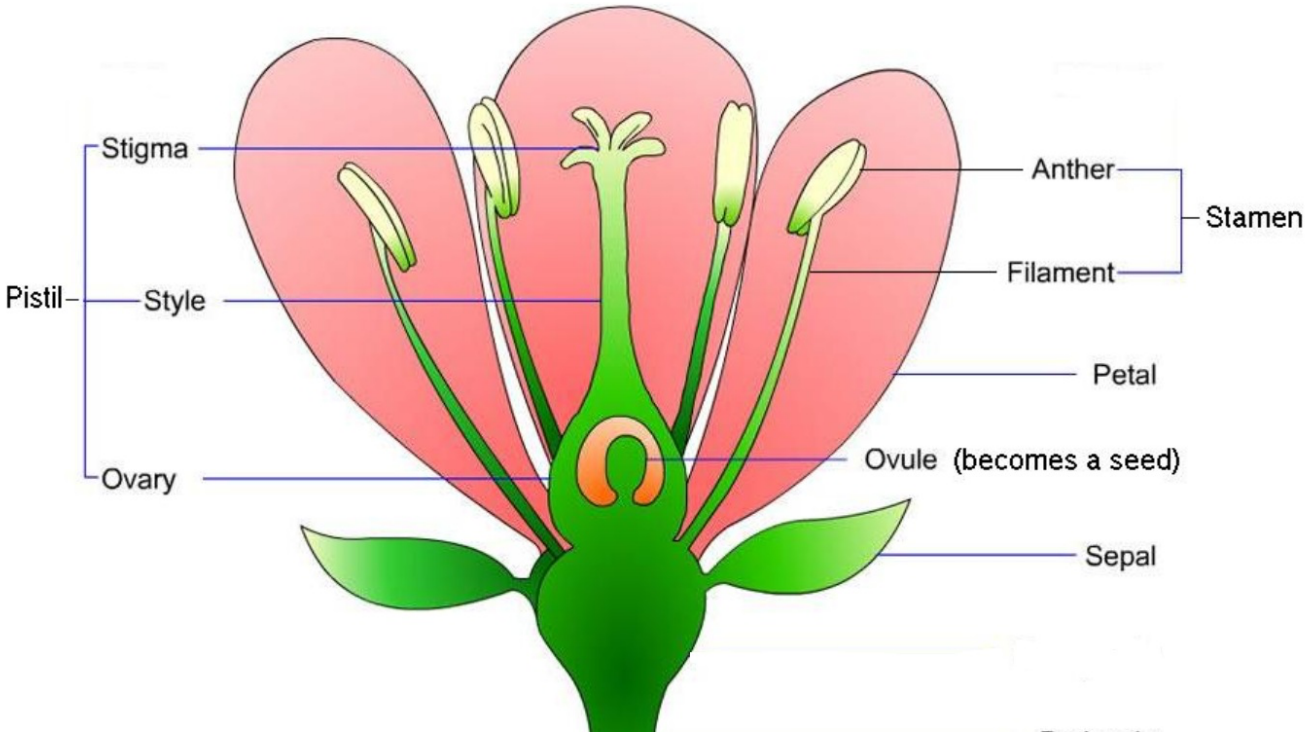


Diagram from http://grandpacliff.com/Plants/Glossary-Plants.htm

Also refer to http://theseedsite.co.uk/flowerparts.html.

Fruit

A fruit is defined as a ripened ovary. The botanical definition of a fruit is a ripened ovary that has seeds and a fleshy or hard-skinned wall.

- Examples of commonly known fruits are: cherries, peaches, pears, apples, bananas and oranges.
- Examples of botanical fruits are tomatoes, squash, cucumber and eggplant.
- Examples of dry fruits are peanuts and walnuts.
- Are pumpkins fruits? *Yes! When we think of fruit we typically think of citrus fruits like oranges, apples, peaches, pears, watermelons and sometimes tomatoes. Based on the botanical definition, wheat, oats and nuts are fruits too. (Strawberries are aggregate-accessory fruits.)*

Seed

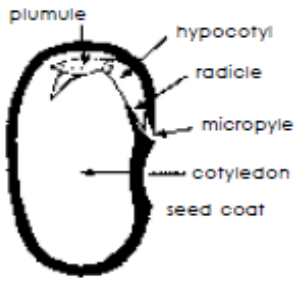
A seed is the matured ovule. It is where most new plants grow from. Examples of seeds are: coconuts, sunflower seeds, etc. Not all seeds are edible. *[The apricot seed is poisonous.]*

Working our way from the outside in … the three main parts of a seed are:

- Seed coat: the hard outer covering which protects the seed from disease and insects and prevents water from entering the seed so germination doesn't occur before the proper time;
- The embryo: the baby plant in an arrested state of development; and
- The endosperm which is the built-in food supply made up of proteins, carbohydrates or fats.
    - Note: orchids do not have an endosperm and in some mature seeds the endosperm has been absorbed and stored inside the embryo and isn't visible.
- Also inside the seed is the cotyledon.

Cotyledon - noun *Botany* [kot-l-eed-n]

The cotyledons are the "seed leaves" that encase the embryo and are usually different in shape from the leaves that the mature plant will produce. The cotyledon serve to absorb nutrients packaged in the seed until the seedling is able to produce its first true leaves and begin photosynthesis.



Phaseolus vulgaris
(one cotyledon removed)
Bean

Diagram from Master Gardener Guidebook

This is an ideal opportunity to note the difference between a Dicot and a Monocot.

Plants producing only one cotyledon fall into the group of monocotyledons or monocots (for example: an onion). Plants producing two seed leaves are called dicotyledons or dicots (for example: beans).

If chosen, do the seed dissection exercise and use the seed parts handout.

For more information refer to the section:
Types of Fruits: Simple, Aggregate, Aggregate-accessory and Multiple

Reproduction Processes and Structures

Pollination and Fertilization

In order to survive many plants must produce seeds. To do this they must be pollinated and fertilized. Some plants, like grasses, depend upon the wind for pollination while many other depend on insect or animal pollinators. There are two types of pollination:

- Self-pollination – the transfer of pollen from the anther to a stigma of the same flower. (Even if the plant is isolated or has no pollinators available the plant will still survive.)
- Cross-pollination – the transfer of pollen from the anther on a flower from one plant to the stigma on a flower of another plant.

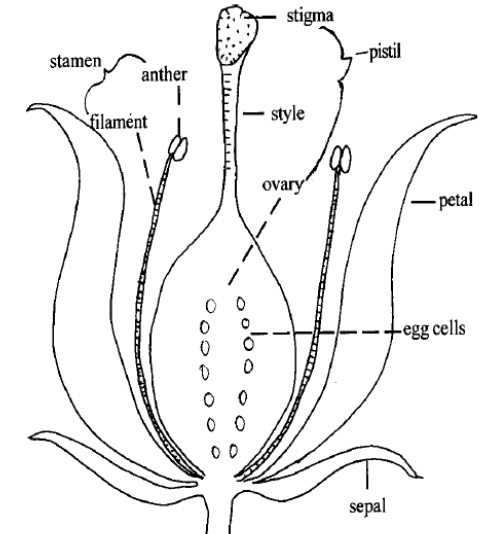
Pollination

Is the process of getting the pollen from an anther to a stigma which causes a chemical reaction to occur.

Fertilization

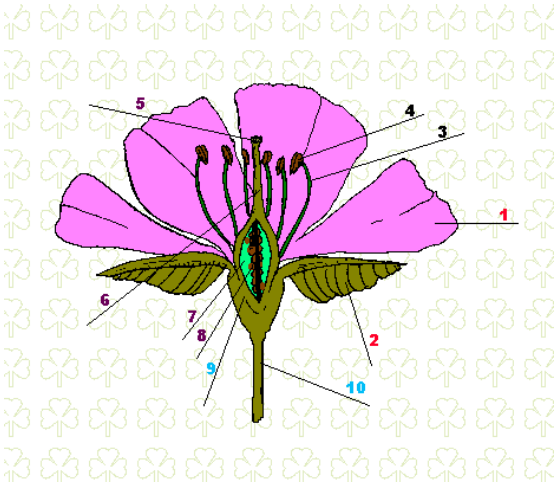
Is the union of the male sperm nucleus (from the pollen grain) and female egg (in the ovule). If fertilization is successful, the ovule will develop into a seed.

- The stigma contains a chemical that stimulates activity of pollen from the same type of plant, causing it to grow a long tube down the inside of the style to the ovules inside the ovary.
- The sperm from the pollen grain moves down the tube and fertilization typically occurs.



Male parts (stamens)
anther (makes pollen)
filament

Female parts (pistil)
stigma
style
ovary (eggs inside)



LEFT: http://www.fs.fed.us/wildflowers/teacher/documents/k5_DesertGardeners_flowerDissection.pdf (link no longer active) RIGHT: Illustration and key from: http://www.botanical-online.com/lasfloresangles.htm 1. (Corolla) Petals, 2. (Calyx) Sepals, 3 & 4 the Stamens (3. Filament, 4. Anther), 5-8 the Pistil (5. Stigma, 6. Style, 7.Ovary, 8. Ovules). Not covered, the receptacle: 9. Thalamus, 10. Peduncle.

Types of Pollinators and Their Role

Fairfax County Science Leads would like us to emphasize pollinators, habitats and their importance in our environment and for our food production. Helping students make connections to their world and develop critical thinking skills is an important part of the new Standards of Learning.

- Examples of well-known pollinators are bees, birds, bugs and butterflies. (The 4 B's)
- Often overlooked pollinators are insects such as moths, beetles, ants and spiders.
- Unusual pollinators include bats, monkeys, possums, rodents and lizards.
- One of the biggest pollinators in size is people.
    - People pollinate plants either by hand pollination (such as done in a nursery) or by transferring pollen on our bodies or clothes from one plant to another.
- The wind assists with pollination by shaking the pollen loose from the anther and blowing it around.
    - Grasses and plants without showy flowers depend upon the wind for pollination.
    - Many trees are pollinated by wind. Mention the green/yellow pollen covering everything!
- While many bugs, insects, birds and animals are viewed as unwanted intruders, many have a vital role in pollinating plants and moving seeds from one place to another.
- Pollinating insects play a critical role in maintaining natural plant communities and ensuring production of seeds in most flowering plants.
    - Bees are reportedly responsible for 1 of every 3 bites of food that we eat and are excellent pollinators because most of their life is spent collecting pollen (protein that they need to feed their developing offspring). They have stiff hair on their legs to move the pollen into brushes or pockets on their body to carry back to their nest.
    - Sonicating bees, such as the bumblebee, are extremely efficient pollinators of tomatoes. Sonication is also called buzz pollination and occurs when the bumblebee vibrates its wing muscles while perched on the flower which shakes the pollen loose.
    - Birds that eat berries with seeds are responsible for the production of seeds when they drop a berry out of their mouth, or excrete them, onto the ground.

Use the PowerPoint slides or create an illustration board of various pollinators to refer to during this section.

This is a fascinating topic so watch your time; it's easy to get carried away!

Germination & Dormancy

Germinate: from the Latin *germea*, for sprout; to sprout from a seed.

Dormant: from the Latin *dormire*, to sleep.

- Some seeds germinate as soon as they are formed.
    - An example of a seed that germinates right away is maple tree seeds. In the spring Maple trees are covered with seeds that look like little helicopters and spin as they fall to the ground.
- Other seeds, like the dogwood, have a natural dormancy. They do not germinate until the conditions are right.
    - Because dogwood trees produce seeds in the fall if those seeds germinated right away they would get frozen and never develop into new dogwood trees.
- Seed need the right amount of oxygen, light, temperature and water to germinate.
    - Oxygen – needed by the seed for metabolism.
    - Light - principal characteristics are: quantity, quality and duration. Some seeds do not need light to begin germination.
    - Temperature – too high or too low or any extreme for too long a period of time will prevent germination.
    - Water – in order for the plant embryo to grow the seed must absorb water through the seed coat.

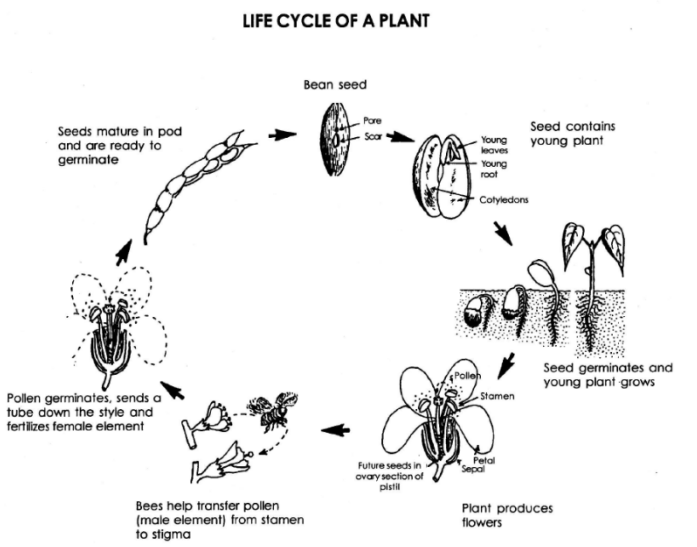
Interesting facts: the record for the World's Oldest Germinated Seed is the seed of an Arctic lupine (Lupinus arcticus) that was excavated from a lemming burrow in frozen Arctic tundra. The seed germinated and flowered after an estimated 10,000 years of dormancy. There are also records of a date palm seed discovered during an archaeological excavation at King Herod's Palace on Mount Masada near the Dead Sea that was carbon dated at about 2,000 years old and an Asian water lotus (Nelumbo nucifera) from China that was germinated after 1,200 years.

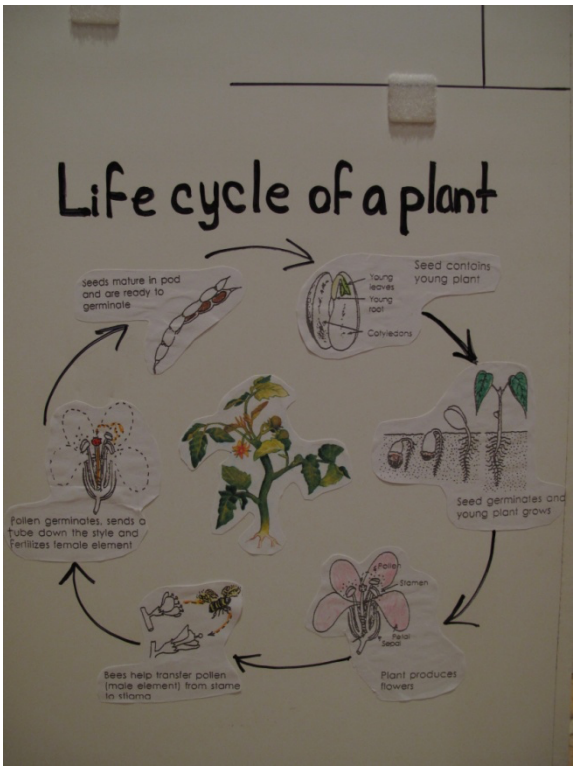
Botanical Record Breakers http://waynesword.palomar.edu/ww0601.htm#oldseed.

Life Cycle of a Plant

Starting with a seed …

- Once a seed begins to grow it becomes a seedling, then grows more into a juvenile, and grows more into an adult (just like people).
- Healthy adult plants will flower so they can reproduce.
- Once a plant has been successfully pollinated it will bear fruit.
- The fruit serves as the protective cover for the seed. Fruits are purposefully tasty to encourage people and animals to eat the fruit and throw, deposit or sow the seeds back onto and into the ground.
- Once the seeds are released from the fruit and drop onto, or are sown into the ground, they will either go dormant waiting for the right conditions to germinate, or they will germinate right away and the life cycle process will continue.





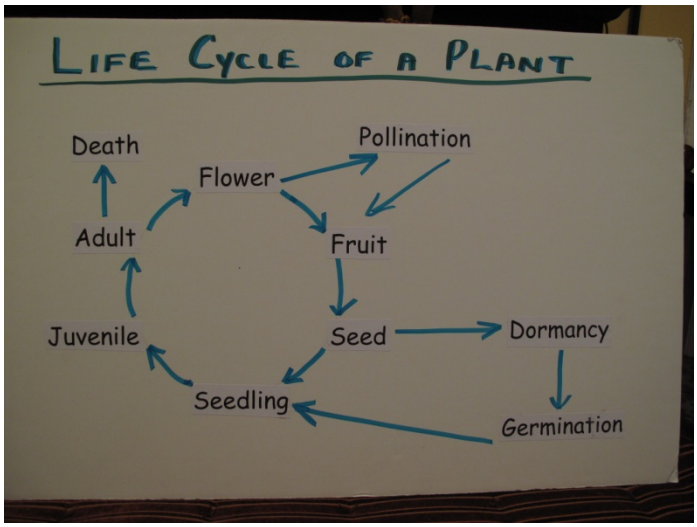


Diagram from the Master Gardner Handbook: A Guide to Gardening in Virginia by the Virginia Cooperative Extension.

Core Activities and Their Objectives

The following activities are standards in the *Ready, Set, Grow!* project, are very popular with the students and must be included in each presentation. Supplies for these activities are provided. The objective is to reinforce the learning of various SOLs in fun and imaginative ways.

Build a Plant

- Group activity.
- Objective: to reinforce knowledge about the five (5) main parts of a plant: roots, stem, leaves, flower, fruit or seed, discuss pollination and adaptations this plant has to survive in its environment.
- Supplies provided: tissue paper, construction paper, chenille stems and pom poms.
- The teacher will need to provide: scissors, tape, glue, stapler, markers or colored pencils.
- Time to allot: 25 minutes (15 minutes for creation and 10 minutes for presentations)

Tips for teams:

1. Pre-sort the supplies for each group into plastic or paper bags the day before.
2. Take pictures of the students while they are creating their Build a Plants and during the presentations if photographs are allowed in the classroom.
3. Mingle with the children and ask them questions. If a group is having a hard time coming up with any ideas help them brainstorm.

Have the teacher divide the class into groups of 4-6 children. Review the instructions before handing out the supplies. Work with the teacher to ensure every child is participating.

<u>Build a Plant Instructions for the students:</u>

This is a group project so everyone must participate! You have 15 minutes to create a Build a Plant. Use the materials that are given to your group. The ONLY guidelines for the plant you create is it must have all five parts of a plant that we reviewed earlier. Each person may work on a piece of the plant and help put it together. When you are finished, your group will come to the front of the room to tell us about your plant, Include a brief description of your plant, its name, where it is found, the five parts of your plant and tell how it is pollinated.

Planting Exercise

- Individual activity.
- Objective: plant one vegetable seed (bush bean) and one flower seed (nasturtium) and watch them grow.
- Supplies provided: peat pots, soil, seeds, craft sticks, plastic bag and "Caring for your Seeds" directions.
- Time to allot: 20 minutes

Tips for teams:

1. Prep the bags the night before by putting one of each seed, one of each pre-marked craft stick and a copy of the Caring for your Seeds instructions. Be sure to take a few extra seeds in case they are lost when students open the packages or you've forgotten any.
2. Prepare the peat pots the night before by moistening the soil, put a piece of unbleached paper towel over the hole in the bottom of each peat pot to prevent the soil from falling through and fill the pots about ¾ full with soil – leaving enough room for the students to water later.
3. Each child gets two peat pots plus you should have two (2) extra to use for example, give to the teacher or just in case there is an extra child.
4. To keep the soil moist put them in an airtight plastic box, cover them with plastic wrap or tin foil, and put the lid on tightly.
5. Bring a spritzer bottle of water with you to remoisten the soil in the classroom if needed.

Directions: once you have confirmed that everyone has their supplies, with a craft stick have the students make a hole in the soil in one peat pot about the size of their pointer finger, about halfway down into the soil. Put one of the seeds into the hole and gently cover it up. Put the craft stick with the appropriate letter on it (B for Bush Bean or N for Nasturtium) next to the side of the peat pot and set it aside. (Mist with additional water if needed.) Repeat this process for the other seed and other peat pot. Gently put the peat pots upright into the plastic bag and seal it – leaving enough air in the bag that when you press on the sides it doesn't go flat. Have the students write their name on their instruction sheet.

Ask the teacher to choose one or more students to read the Caring for your Seeds instructions. Meanwhile the other team member and the teacher can help the children tape or staple the instructions to the top of the plastic bag, without puncturing the sealed area.

Additional Tips:

1. Moisten the soil before filling the peat pots by putting the plastic bag under a faucet and fill with about 2 cups of water. Mix the water into the soil and continue adding water until the soil is thoroughly moist without being dripping wet.
2. Use a spoon to fill the peat pots – about two serving spoon size heaping spoonfuls in each pot. Adjust as needed.
3. One average size plastic shoe box will hold up to 30 filled peat pots stacked as seen in the photo below. This is a great way to keep the soil moist, prevent spillage during transport and very easy to pack!

The Living Seed Necklace

- Individual activity left with the teacher to do with the students at another time after your presentation.
- Purpose: To increase student's awareness about seeds and seed germination.
- Supplies provided: one gallon size plastic bag complete with the appropriate number of cotton balls, Cat grass/wheat seeds, small plastic jewelry bags, pre-cut strands of yarn and the wheat grass seeds and instructions.
- Supplies the teacher will need to provide: water.
- Time to allot: 5 minutes to present this activity to the teacher while explaining it to the children.

Project Explanation: Cat Grass, also known as wheat grass, is an annual that grows in sunny locations. Germination takes 4-7 days and can be started inside at any time. Cats love Cat Grass because it's good for their digestive system. People love wheat grass because of its health benefits to us too.

Procedure:

- Dip one cotton ball in the cup of water long enough to saturate the cotton. Squeeze out any excess water.
- Pick up one seed with the cotton ball. If you use more than one seed, they will be crowded and will rot.
- Place your wet cotton ball and seed in the small jewelry bag and seal the top of the bag.
- String a piece of yarn through the hole in the bag; tie a knot at the end of the string to form a necklace.
- Water when dry, every few days. The Cat/wheat Grass will germinate in 4 – 7 days.

Tips for teams:

1. At least 4-7 days before the class, from the supply packet for the school, start 1-2 seed necklaces to wear to the class and leave behind with the teacher.
2. Use warm water and keep the seed necklace in a warm place to speed up germination.

Preparing for Your Classes and Supplies Each Team Should Have

Supplies are distributed to all volunteer teams well before classroom presentations begin. For each class, you will pick up the following supplies which will then be prepared as mentioned previously into kits that you take to each classroom with you.

<u>One set per team, per class. A copy of this list is included in each bag.</u>

- ONE plastic bag of soil (two bags if you have the largest size class)
- TWO peat pots per child **individually counted! PLUS two extras for each class**
- ONE plastic bag with the following supplies:
    - Planting Exercise
        - 'Caring For Your Seeds' handout
        - Popsicle/craft sticks
        - Small plastic bag of nasturtium seeds
        - Small plastic bag of bush bean seeds
        - Plastic bags to hold & transport the peat pots
    - Build a Plant Exercise
        - Tissue Paper
        - Construction Paper
        - Chenille stems (pipe cleaners)
        - Pom-poms
    - One 4-H tri-fold brochure
    - One Fairfax County 4-H Clubs reference sheet
- ONE gallon size plastic bag with the Living Seed Necklace kit
    - Yarn
    - Cotton balls
    - Plastic jewelry bags
    - Cat Grass/Wheat seeds

BEFORE LEAVING WITH YOUR SUPPLIES, CHECK TO BE SURE YOU HAVE EVERYTHING!

Sample Letter to Teacher

Dear (teacher's name),

(Your name) and (partner's name) are excited about coming to your class on (list date and time of presentation.

Please help us with our presentation for your students by confirming or providing information on the following:

- How do you prefer to be addressed in your classroom?
- Please confirm the number of students in your class. Your registration form indicated there were (insert #), which may have changed since you registered.
- At the time of our presentation where will the students be in their knowledge of plants?
- Will you have dissected any seeds or flowers?
- If we bring in some flowers, will small amounts of pollen be an issue for students with allergies?
- Will you have used a vegetable & fruit basket for an activity in your class?
- Will you have _____ **(Ask the teacher for anything that you'll need for your presentation … whiteboard, Smartboard, projector screen, overhead projector, hand lens, table to use for your presentation, use of the chalkboard, is there a flip chart available, etc.)**
- If we bring a camera to take pictures during various activities, are there any children that are not allowed to have their photo taken?

A few things we need and would appreciate your help with:

- Please provide your students with name tags before we arrive so we can call them all by name and avoid any delays and disruption.
- As part of our presentation we will have some hands-on activities planned; one of the activities will require the students to work in groups of 4 or 5. It would be very helpful if you could have a plan beforehand of who works best together when it's time to separate into groups.
- We need 5-10 minutes of time to set up, a table to use for our presentation and 5-10 minutes at the end to clean up. This can be done quietly while your class is working on something else.
- To ensure a safe, enjoyable and productive time for everyone during our presentation you must be present at all times.
- If for some reason you cannot be present on the day of our presentation, please contact me immediately by phone and by email. If possible we will try to reschedule.
- Substitute teachers are not allowed; there are no exceptions.

If you have any questions or comments, please don't hesitate to contact us.

(your name)	(partners name)
(phone number)	(partners phone number)
(email address)	(partners email address

Presentation Checklist

To be sure you're doing everything you need to in advance and have everything with you when you walk out the door; it's a good idea to create a checklist like the one below for every class.

After the RSG Leadership Team has confirmed your class sign-up

- ☐ Contact the teacher by email to introduce yourselves, confirm the date & time of your presentation and ask questions.
  Note: **if your class is several weeks away do not wait to contact the teacher**. They have been waiting since January to know if their class has been claimed, and on what date and time**. Make the initial contact then touch base with them 2-3 times between your first contact and your class presentation.**
- ☐ Meet with your partner to review the training materials, create your lesson plan and decide which activities you'll be doing.
- ☐ Meet with your partner to do a dress rehearsal of your presentation.
- ☐ Meet with your partner to prep supplies, or do your own. Save time and frustration by prepping as many non-perishable supplies as you can in advance. Enlist the help of your friends, family and/or children to make this task easier.

Before each class

- ☐ 7-10 days before contact the teacher to:
  - Re-confirm the date and time
  - Confirm number of students and number of small groups
  - Email any handouts you need provided for the class

- ☐ 4 – 7 days before, from the supply packet for the school, start a seed necklace to wear to the class and leave behind with the teacher.

- ☐ 1-2 days before (as applicable):
  - Send a confirmation email to the teacher
  - Remind the teacher of any handouts you need them to print for the class
  - Pack or stage all non-perishable supplies you'll be using (Build a Plant, planting exercise, living seed necklace, supplies for activities you've chosen, 4-H handouts etc.)
  - Illustration boards (if used)
  - Props
  - Copy of your agenda
  - Copy of your lesson plan
  - Copy of the Accident Report
  - Timer or watch
  - Directions to the school
  - Etc.

- ☐ The day/night before (as applicable):
  - Soak beans if dissecting
  - Prepare the peat pots (2 per child + 2 extra for each class)

Best Practices, Tips, Reminders and Suggestions

Redundant or new, these are the tips, reminders and suggestions that keep coming up year after year and things every volunteer needs to know!

Creating and Planning Your Presentation

1. Time is valuable so don't waste it re-creating a wheel or overwhelm yourself with trying to do too much. Use available hand-outs and other collateral materials to guide you.
2. Be careful to monitor your time. Research and prep can be fun; don't let it become a burden.
3. When in doubt, keep things simple.
4. Work to your strengths as individuals and as a team. Teamwork makes every task easier.
5. Take advantage of your individual strengths but also take turns presenting information and leading activities. Don't get in a rut! Be flexible. Learn so you can be a better presenter and mentor a new RSG volunteer someday.
6. Review your lesson plan with your partner several times to be sure all key concepts are covered.
7. Rehearse your presentation at least once in person prior to the first class so you each know who is going to do what and when. Make adjustments as necessary.
8. Make an outline of the information that you'll be covering in your presentation and print it onto note cards, a small handheld notebook or spiral binder for easy reference. Keep it handy!
9. Don't bury your head in your outline or notes – they are for your reference to keep you focused and on track, not a crutch.
10. Share new ideas with the leadership team – they may be interesting and useful to others!

Collateral Materials, Props and Supplies

1. Props and other collateral materials such as illustration boards, photos, PowerPoint slides, other items, etc. can enhance your presentation but too much of a good thing can be confusing.
2. Use PowerPoint slides as visual collateral materials, not like a business presentation. It's so important for kids this age to keep it fun and interactive.
3. Donate any unused supplies to the teacher, save them for another class or turn them into one of the chairs at the end of the season. (Note: supplies turned back in must be in "like new" condition.)
4. Don't waste money on expensive supplies. Use the free collateral materials available to you.
5. Email handouts to the teacher and ask them to make copies for their students.
6. Print or make copies of the plant and seed parts sheets (posted to the RSG Documents section) and put them inside inexpensive clear plastic sheet protectors that can be easily wiped off and re-used.
7. Prop idea for reviewing the plant parts: use a felt board with the plant pieces and build it from the bottom up as your review.
8. When dissecting flowers don't forget to split open the ovary and show the ovules. They are best seen with hand lenses. Be sure to ask teachers if they can have hand lens available for each student.
9. Start germinating lima beans inside plastic cups with wet paper towels so students can see each stage of the germination process.
10. Carnivorous plants like a Venus fly trap are fascinating to students. One note of caution: students can easily get caught up in discussing them so watch your time. These can also be expensive plants.
11. Think of things you may already have at home to illustrate a concept. For example: a terrarium can be used to demonstrate a tiny biosphere / mini environment / closed ecological system / life processes of the ongoing cycle of moisture evaporating from the soil and the natural ingredients inside. If you are planning to start seeds for planting and growing in your garden, bring a few into the class in various stages of germination. A cd case is an easy and illustrative way of showing germination.

Prepping Supplies

1. Prepping supplies is required before every presentation so divide and conquer. Work with your partner or enlist help to make this task easier.
2. Don't waste valuable time in the classroom dividing up supplies – prep everything beforehand and organize it so it's easy to grab and distribute.
3. If you and you partner are only teaching one class a day, take turns providing and/or prepping supplies.
4. If you're doing two presentations in one day each person should prepare the supplies for one class.

Packing Your Supplies

1. By the time you have gathered up the supplies, peat pots full of moistened soil, props or illustration boards, you've got a handful. Reduce to the smallest size and number possible.
2. Pack smartly. Make things easy to retrieve, stage and re-pack.
3. Pack your peat pots in closed and secured containers, preferably plastic, to keep them moist and secure.
4. Use a lightweight cart with rollers, like the one pictured below, to pack plastic shoe boxes of peat pots with soil, classroom supplies, your props and papers. Look for inexpensive, but sturdy rolling handcarts or a rolling duffel bag.
5. Protect your illustration boards and make them easy to carry by putting them in a large drawstring plastic garbage bag and tie the top in a bow. To carry just grab around the tied drawstring.



6. Buying an art portfolio, a carry bag or case at art supply stores to transport your illustration boards are an option, but they can be expensive. Look for sales, check for coupons and look for ads posted by students, etc. if you decide to purchase one.
7. Print off one copy of the Accident/Incident report to take with you to all presentations.

Logistics at the School

1. When arriving for your presentation allow 15-20 minutes extra to park, check in at the school office and get to the classroom. A good plan is to arrive 30 minutes before your presentation is scheduled to begin.
2. Plan ahead! If you're not familiar with the school's location, do a trial run. Keep in mind that rush hour can add substantial time to your trip.
3. If your class is at the beginning or end of the school day, be aware that student drop off/pick up (Kiss N Ride) can affect traffic flow near the school. Buses can also make some parking areas inaccessible during arrival and dismissal. Beware if you park close to the doors that you could get blocked in.
4. Most schools now require you to contact the office via an intercom then unlocking the door for you to enter the school after you identify yourself.
5. Many schools have computer sign-in with printed paper name badges, and some take photos, while others have notebooks and blank name badges. You will need identification (i.e., your driver's license) to sign in. Don't forget your FCMGA name badge!
6. You are always a guest at the school and represent Ready, Set, Grow and the FCMGA and Green Spring MG programs.

Technology in the Classroom

1. Don't be wary of using technology in the classroom. Many classes are now equipped with computers, projectors, Smartboards, etc. and these can make conducting your presentation easier than carrying in a lot of illustration boards and props.
2. If you don't know how to use a Smartboard, or projector ask the teacher to help you.
3. YouTube on the Internet has many informative videos on how to do just about everything, including how to operate a Smartboard and a projector.
4. Most of the teachers, and students, are willing to help you use technology in their classroom, just ask!

During your presentation

1. Be familiar with the information in your lesson plan.
2. Don't put yourself in a panic! Only you and your partner know what you plan to say next or how. If you find yourself suddenly lost, pause, recollect yourself and move on. Help each other stay on topic.
3. Keep your agenda with start & end times handy.
4. Help each other stay on time. Develop signals to indicate the need to move on or wrap things up.
5. Have a plan for which <u>additional</u> activity or information you can skip in case you run short on time.
6. One team member can stage props or supplies for the next topic while the other member is presenting.
7. If students ask a lot of questions, or want to share their stories, ask the teacher to collect these for you, email them to you and you can respond to them in a timely manner.
8. There will be students who monopolize the conversation. Some good phrases to have on hand are, "Let's try to give someone else a turn" or "Do you have a question or a comment?" Too many personal stories from the kids, while fun, can take up a lot of time so taking questions instead of comments can help to keep the program moving while still addressing questions.
9. *Have FUN!*

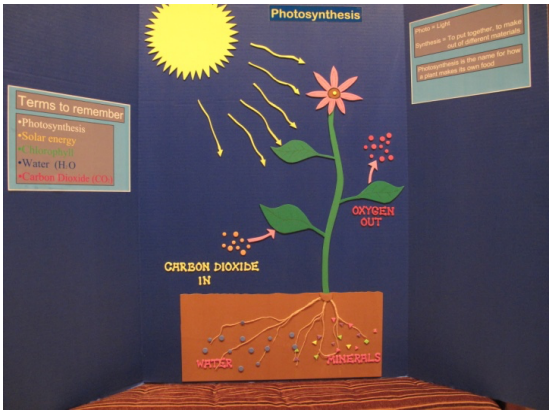
Interacting with the Students

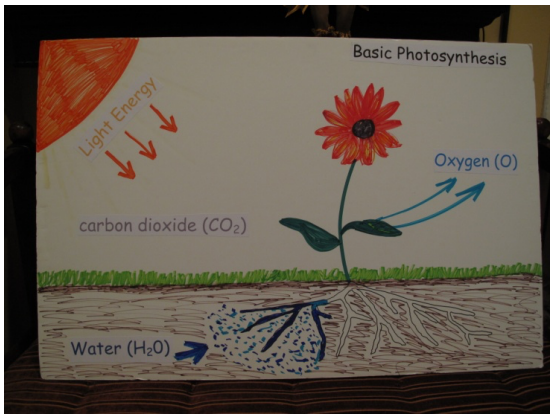
1. **Vary the tempo of your presentation** by alternating information sharing with activities and use a variety of activities. This may include dimming the lights to view some PowerPoint slides while providing information, then turning them back on and doing an activity or conducting an interactive (and fun!) review.
2. Children respond best to a mixture of talk and activities! Limit how long children are sitting still and only allowed to listen to no more than 10 minutes at a time. RSG should never be monotonous.
3. Engage the children's interest immediately by wearing a gardening costume, such as straw hat, apron with garden design, overalls, Master Gardener t-shirt, colorful clothing, gardening shoes/boots, etc.
4. Enlist children to help distribute materials as "gardener's assistants." (Check with the teacher first, they may have designated helpers.)
5. Work with the teacher to be sure all children are involved.
6. Ask the students to help clean up after activities.
7. Be generous with praise and show your own enthusiasm for gardening!
8. Controlling and disciplining the class is the responsibility of the teacher.
9. Command attention by lowering your voice (rather than raising it), asking "can you hear me?" If things seem somewhat out of control, say, "eyes on me, please," and wait quietly for a few seconds. (Each teacher has a "trick" … some will hold up one hand and count slowly, others use chimes or bells. Ask the teacher what their "trick" is.)
10. Don't lose touch with your audience. If the students seem confused take a moment to ask them if they have any questions. If they seem bored, adjust accordingly.

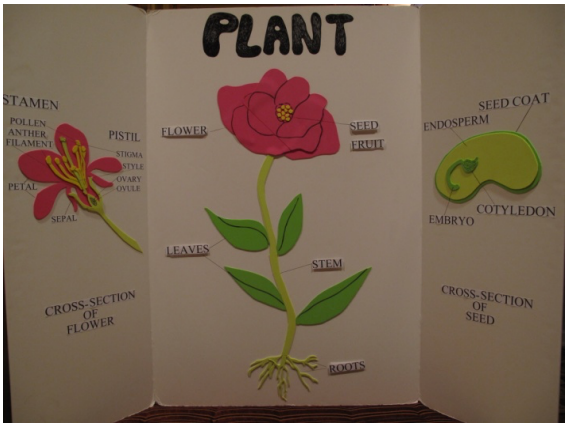
After Each Completed Class

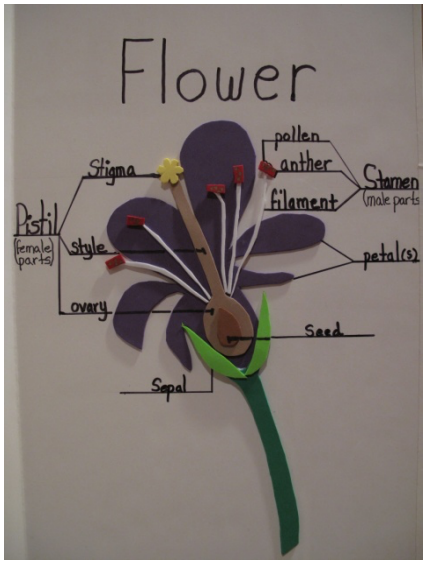
1. Discuss with your partner how the presentation went and be flexible to make changes to your presentation if need be.
2. If you have taken photos, email them to the teacher as soon as possible after your presentation. Send copies of photos to the RSG Leadership Team.
3. Send an email to **ReadySetGrow@FairfaxGardening.org** to notify them the class was completed.
4. Make notes about any questions or suggestions that came up during your presentation.

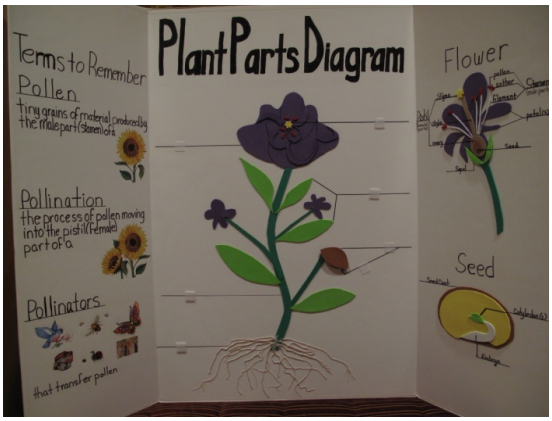
Examples of boards used by RSG teams

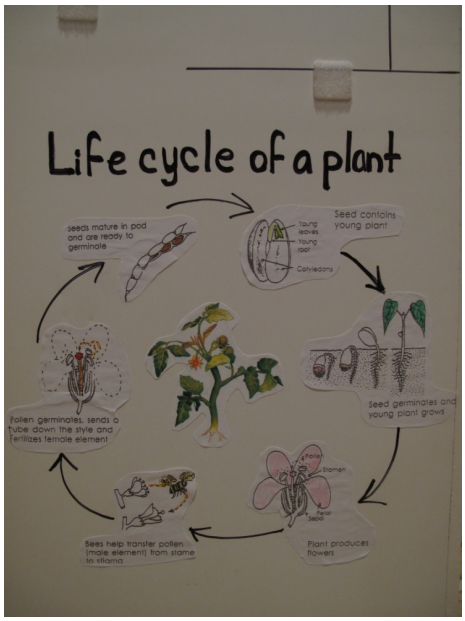


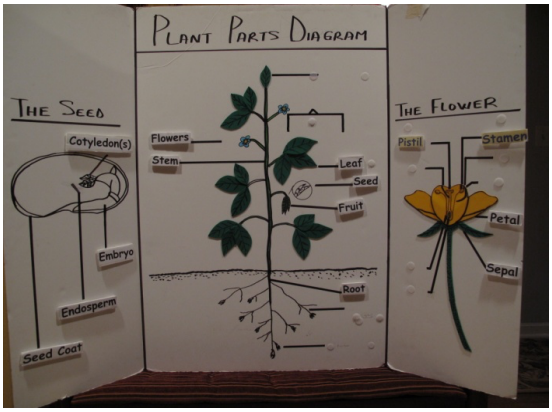






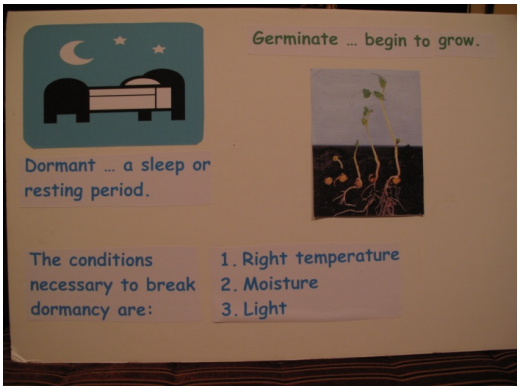


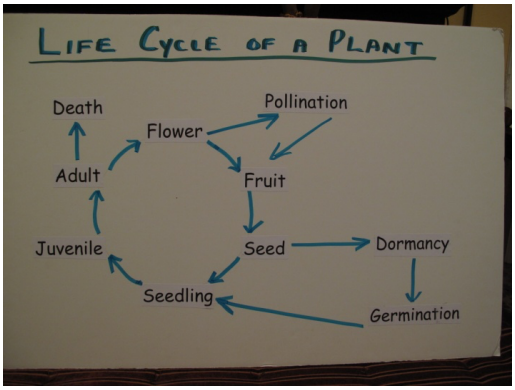





Pistil
Stamen
Petal
Sepal

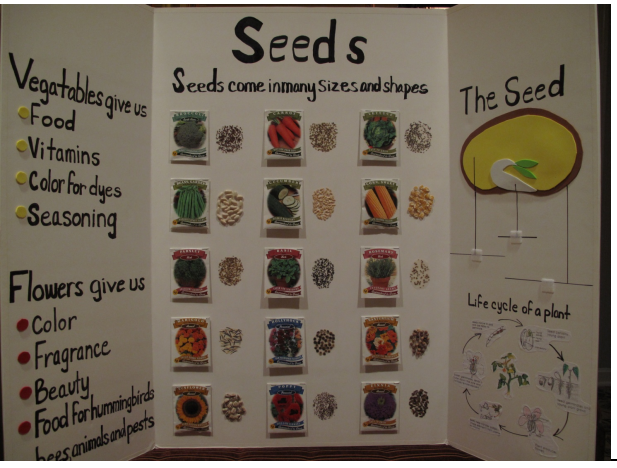

P.S.P.S


Germinate … begin to grow.
Dormant … a sleep or resting period.
The conditions necessary to break dormancy are:
1. Right temperature
2. Moisture
3. Light


Life Cycle of a Plant
Death
Pollination
Flower
Adult
Fruit
Juvenile
Seed
Dormancy
Seedling
Germination


SEEDS COME IN MANY SIZES


Seed Board
Flowers give us:
•Color
•Fragrance
•Beauty
•Food for bees, hummingbirds, other animals and pests
Herbs give us:
•Food
•Seasoning
•Medicines
•Fragrance
Vegetables give us:
•Food
•Seasoning
•Vitamins
•Color for dyes


Seeds
Seeds come in many sizes and shapes
Vegetables give us
Food
Vitamins
Color for dyes
Seasoning
Flowers give us
Color
Fragrance
Beauty
Food for hummingbirds
The Seed
Life cycle of a plant

Virginia Cooperative Extension (VCE) Accident/Incident Report

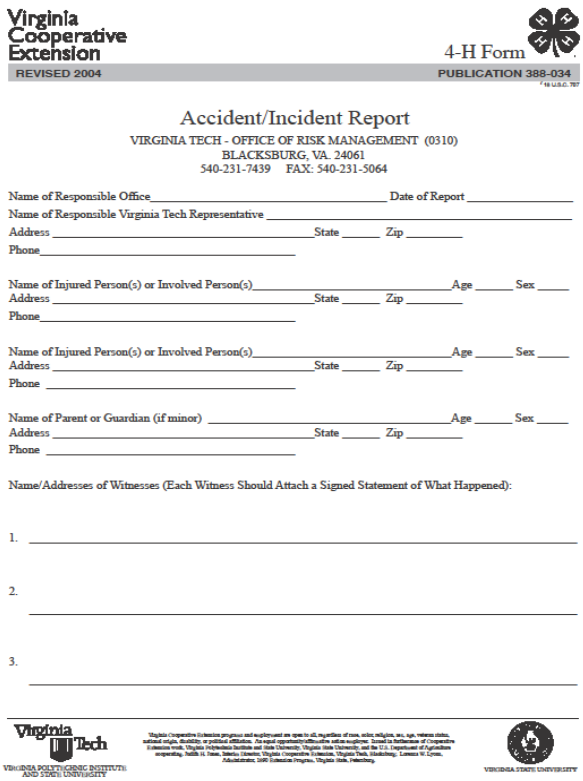
Please print a copy of this 3-page form from the RSG Documents page or the VCE website http://www.4-h.ext.vt.edu/forms/index.html to have with you whenever you visit a school.

On the VCE website the Accident/Incident Form (PDF), #388-034 can be found under 4-H Risk Management Forms section

Follow the instructions on the form and contact Adria Bordas on her cell phone at: 571-732-6009 then notify one of the RSG Leadership team members that you have reported an incident.

THIS ACCIDENT/INCIDENT REPORT IS NOT REQUIRED FOR INCIDENTS SUCH AS SCRAPES, BRUISES, SPRAINS, ETC. THIS INCIDENT REPORT IS REQUIRED FOR SERIOUS ILLNESSES, SIGNIFICANT BEHAVIORAL PROBLEMS OR ACCIDENTS INVOLVING INJURIES LIKE FRACTURED BONES, CHIPPED OR BROKEN TEETH, EXTENSIVE LACERATIONS INVOLVING SUTURES, FALLS INVOLVING UNCONCIOUSNESS, DISLOCATIONS, INCIDENTS INVOLVING WATER WHICH REQUIRE RESUSCITATION, OR ANY INJURY REQUIRING HOSPITAL STAY.

THIS ACCIDENT/INCIDENT REPORT IS ALWAYS REQUIRED WHEN THE PROCEDURES OUTLINED ON THE EMERGENCY RESPONSE CARD AND CARRIED BY ALL COOPERATIVE EXTENSION REPRESENTATIVES ARE INITIATED. ONCE COMPLETED THE FORM SHOULD BE FAXED TO 540-231-5064 AND MAILED THE VIRGINIA TECH OFFICE OF RISK MANAGEMENT.



Virginia Cooperative Extension

4-H Form

REVISED 2004 PUBLICATION 388-034

Accident/Incident Report

VIRGINIA TECH - OFFICE OF RISK MANAGEMENT (0310)
BLACKSBURG, VA. 24061
540-231-7439 FAX: 540-231-5064

Name of Responsible Office_____ Date of Report _____
Name of Responsible Virginia Tech Representative _____
Address _____State _____ Zip _____
Phone_____

Name of Injured Person(s) or Involved Person(s)_____Age _____ Sex _____
Address _____State _____ Zip _____
Phone_____

Name of Injured Person(s) or Involved Person(s)_____Age _____ Sex _____
Address _____State _____ Zip _____
Phone _____

Name of Parent or Guardian (if minor) _____Age _____ Sex _____
Address _____State _____ Zip _____
Phone _____

Name/Addresses of Witnesses (Each Witness Should Attach a Signed Statement of What Happened):

1. _____

2. _____

3. _____

Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

VIRGINIA STATE UNIVERSITY

Thank You!

In closing, a reminder that the teachers and students in Fairfax County Schools are grateful for the time you have committed to teach the *Ready, Set, Grow!* project and they are excited to welcome you and your partner into their classrooms!

Your impact on the education of the students you'll be working with can't be overstated. Their experience with your presentation could be one that lasts a lifetime.

It is our hope that the time and the effort that you give as a *Ready, Set, Grow!* volunteer are rewarding and *FUN* for you too. Nothing makes learning easier than enthusiasm!

Many thanks from the *Ready, Set, Grow!* Leadership Team!

Resources

- Dissection of Flowers http://www.fs.fed.us/wildflowers/teacher/documents/k5_DesertGardeners_flowerDissection.pdf.
- Flower Parts http://grandpacliff.com/Plants/Glossary-Plants.htm.
- Plant Life Cycles http://www.fws.gov/invasives/volunteersTrainingModule/invasives/plants.html
- Master Gardner Handbook: A Guide to Gardening in Virginia by the Virginia Cooperative Extension
- University of Maryland Master Gardener Handbook, September 2008
- http://www.thefreedictionary.com
- Parts of the Seed http://www.botanical-online.com/llavorangles.htm
- http://nativeplants.msu.edu/about/pollination
- http://en.wikipedia.org/wiki/Pollinator
- De Hertogh, A.A. and M. Le Nard. 1993. **The Physiology of Flower Bulbs.** Elsevier Scientific Publisher. Amsterdam, The Netherlands.
- http://theseedsite.co.uk/fruits.html

Other Internet Resources

You can find almost anything on search engines. For example, using Google, Bing or Goodsearch, type in *parts of a plant diagram* or use Google Images and type in *Pole beans*. You can print directly from the web or save the page by going to File, then click Save Page as…. A box will open and you can select where to save the page(s). Another method is to copy the page using Edit, open Word, then save the page in Word, thus allowing you to make small changes, and add the source.

WARNING: Be mindful of copyrighted material!