BLUE RIDGE LAND CONSERVANCY
GREEN THUMBS GARDEN CLUB

Fall Garden Club Curriculum

Week 1: Introduction to Garden Club

Program Affiliations: The Edible Schoolyard Berkeley

Students introduce themselves and brainstorm ideas for potential gardening activities they would like to do for fall garden club. Students bond and get to know each other and participate in garden work.

Objectives

- Bond and get to know each other
- Students help brainstorm activities for upcoming garden clubs
- Participate in garden work

Materials

Paper
Pencils
Gloves
Wheelbarrow
Compost bin

Procedures

Welcome students to garden club. Provide an overview of the day and take attendance. Let students know that today is an opportunity for the group to get to know each other and to come up with ideas for what the garden club will do over the next 10 weeks. (15 minutes)

Give each students a pencil and paper and have them silently write ideas for upcoming activities they would like to do in garden club. Tell students that next week they will have the opportunity to review all the ideas and pick their favorites. (15 minutes)

Take the group to the area where they will be working and spend 10 - 15 minutes on a garden job. Fall is the perfect time to clean up the garden. Pull up non-producing vegetables and annuals and collect seeds for spring planting. Non-weedy plant material can be composted if there is room in the composter. Have students clean and put away tools. (30 minutes)

- See more at: http://edibleschoolyard.org/resource/introduction-garden-club#sthash.WB1cmR6F.dpuf

Plant a Fall Garden

Objectives

- Students learn what fruits, vegetables, and meats are available during the autumn months.

Materials

Seeds (beets, garlic, arugula, collards, kale, mustards, cilantro, dill, lettuce, radishes, turnips)
Spades, shovels, rakes, etc. (for tilling soil)
Fertilizer (optional)
Rulers (optional)
Mulch (optional)

Background

Fall is an excellent time to grow many vegetable crops. During this season the gardener can take advantage of cooler temperatures and more plentiful moisture. Many spring-planted crops such as lettuce and spinach tend to bolt, or produce seed, and become bitter in response to the long, hot summer days. Fall gardening helps extend your gardening season so that you can continue to harvest produce after earlier crops have faded.

Vegetables such as broccoli, cauliflower, and Brussels sprouts are better adapted to fall gardening, since they produce best quality and flavor when they can mature during cooler weather. For many crops, insect and disease pests are not as much of a problem in fall plantings.

Many vegetable crops are well adapted to planting in late summer for a fall harvest. These include beets, garlic, arugula, collards, kales, mustards, cilantro, dill, lettuce, radishes, turnips, and more!

Have the students decide where they would like to plant the seeds. Consult each seed packet for specific instructions for each type of seed. Show students how to dig small holes (bigger seeds) or rows (smaller seeds). Have them sow seeds with appropriate spacing measures, using rulers or other measurement tools as needed. For example, one inch is roughly the measure from the top knuckle on your thumb to your thumb tip. Four inches is roughly the width of an adult hand when measured across the bottom knuckles excluding the thumb. A dollar bill is 6 1/6 inches long. Make sure students cover seeds, but not too thickly. Spreading a light layer of mulch on top of the seeds can help protect them from cold weather, but is not necessary.

You may want to lightly water seeds after planting.

Procedures

Remove all previous crop residues and any weed growth. Completely prepare the soil by rototilling or spading 6-8 inches deep. Spread fertilizer if using. If spring crops were heavily fertilized, then no additional fertilization may be needed.

Late summer plantings often suffer from hot soil and a lack of water. Soils may form a hard crust over the seeds which can interfere with seed germination, particularly in heavy soils. Use a light mulch of vermiculite, compost, or potting soil over the seed row to prevent a crust from forming. Seeds of lettuce, peas, and spinach will not germinate well when the soil temperature is 85°F and above. Shading the soil and using a light mulch over the seed row will help keep the temperature more favorable for germination. Planting the seeds slightly deeper than spring plantings may also be beneficial, since temperatures will be slightly cooler.

Get a Jump-Start on Spring

Objectives

- Learn the parts of the bulb

- Living things have basic needs, which are met by obtaining materials from the physical environment.

- Living things require energy, water, and a particular range of temperatures in their environments.
- Plants get energy from sunlight. Animals get energy from plants and other animals.

Materials

Bulbs (crocuses, snowdrops, daffodils, tulips, hyacinth, etc.)
1 bulb cut open to show the inside to students and/or 1 onion cut open to compare to bulb
Spades
Parts of a bulb handout
Rulers (optional)

Background

Although the gardening season will soon be coming to a close, there is still one planting activity to be done: planting bulbs for spring flowers. While it may seem odd to plant bulbs now, the reason is that spring-flowering bulbs need time to develop a solid root system before winter sets in. For best results, wait until soil temperatures are below 60 degrees F before planting bulbs. That means waiting to plant until mid-September or October.

You can buy bulbs at most garden centers, or if you have enough time, order them through catalogs. By choosing different varieties, you can enjoy spring flowers from late winter to early summer. For an early glimpse of spring, plant crocuses and snowdrops. Daffodils bloom next, followed by tulips, and grape hyacinth. Indian hyacinths (Camassia) are some of the last, along with Summer Snowflakes (Leucojum).

A bulb is a promise of a plant to come. These "packaged plants" each have a complete miniature plant inside along with its food. The word bulb describes plants that grow from an underground mass of food storage tissue. True bulbs, like tulips and daffodils, contain a complete miniature plant surrounded by fleshy scales attached to a basal plate from which plants grow. The scales are mostly carbohydrates and nourish the young plant. True bulbs can be either tunicate, with a papery covering such as onion or tulip, or non-tunicate, with no paper covering such as over the fleshy scale like leaves of a lily.

If a bulb is sliced in half horizontally, you will see rings formed by the scale leaves. These scale leaves store food for use by the bulb as it grows. If you slice a bulb vertically, you should be able to find leaves, stems, and even flower buds. You can use an onion or use some of the paperwhite narcissus bulbs that will be used in the planting activity.

Procedures

Engage the students in a discussion about bulbs. Hand each student one or two bulbs.

Share these details:

- The life cycle of spring-flowering bulbs, like daffodil or tulip, starts when we plant the bulbs in fall. Roots grow in the fall, but the plant stays inside the bulb. The best time to plant is when the soil is near 50º-55º F.
- In winter, the bulb is dormant (at rest), like our trees and many other plants. These bulbs need the cold winter soil to get ready to bloom in spring.
- In spring, the bulb is dormant until the soil temperature is warm enough and there is enough water to signal the plant inside the bulb to grow. Daffodil flowers will open in March and April and tulips in April.

- After flowering, the bulb begins to grow underground and a seedpod will form in place of the flower. The green leaves make food to provide energy for a new plant to form inside the bulb, for more layers to grow, and for older bulbs to grow new bulbs.
- Daffodil bulbs are fully developed by the middle of July.
- When the leaves die in the summer, the bulb is still alive but not actively growing.
- The bulb will continue to grow a new plant year after year following the same cycle.
- We plant bulbs so we don't have to wait a long time for flowers to grow. Bulbs can be grown from harvested seeds, but the period from seed planting to blooming flower is several years. In the case of a daffodil, the period of seed germination to blooming flower is five years. Bulbs that are too small will not produce flowers, but will produce leaves.
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Give each student a worksheet with the parts of a bulb. Explain the parts of the bulb and relate them to the plant needs. The exact terminology is not important as important as knowing the role of each part.

- What is the purpose of the skin on the outside? The skin on the outside protects the bulb from damage or drying out underground. It acts like a coat to protect the bulb.
- What are the parts coming out of the bottom of the bulb? Those are the roots from the spring. The bulb will grow new, healthy roots after we plant it.
- Show the inside of a bulb. Can you guess the reason for the layers? Compare it to the layers inside an onion. What is the purpose for those layers? The onion layers are food. Just like food helps us grow, the layers inside the bulb are food to help the bulb grow a plant.
- Do you see anything else inside the bulb? Help the students notice the greenish/yellowish center. This is the new plant that will grow in the spring. The new plant is protected in the layers and gets food from the layers to push through the soil in the spring.

Get into pairs. Break into groups based on volunteers and planting sites. Walk to planting site. Either have tools at each planting site or pass out to students before leaving the general meeting area.

Review planting instructions: Plant bulbs upright, pointed ends up, at the recommended depth. As a rule of thumb, bulbs should be planted three times as deep as the bulb's greatest dimension. Use a shovel, trowel, or bulb planter, and space bulbs according to size. Large bulbs such as tulips and daffodils should be placed four to six inches apart while smaller bulbs such as crocus, snowdrops, and squill should be placed one to two inches apart.

Catering to Wildlife

**need permission from school administration to hang bird feeders

Objectives

- There are different types of gardens – vegetables, herbs, flowers, and wildlife
- Like plants, wildlife need food and water as well as places to hide from predators and places to raise their young

Materials

- Depends! See activities below and choose based on available resources and time.

Procedures

Birds - Bird feeders are a great way to attract birds to your garden all year long. Choose one or two of the feeders below to make with the students:

- **Soda Bottle Feeder:** Remove the stickers from a 2-liter soda bottle, and wash and dry it completely. Drill two small holes in the bottom of the bottle, and thread a piece of wire through them. Twist the two ends of the wire together to hang it. Insert dowels near the bottom of the bird feeder and cut an opening for the birds.

- **Bagel Feeder:** Place all-purpose birdseed in a plastic zipper bag, spread some shortening or lard on a stale bagel and place it inside the zipper bag. Shake until the bagel is well coated. Hang the bagel from a tree with a piece of string.

- **Cardboard Tube Feeder:** Thread a long piece of yarn through a cardboard tube. Lay the tube on a piece of wax paper and spread honey all over the tube. Sprinkle birdseed on the wax paper and roll the tube in the birdseed until it's well coated. Tie the yarn and hang the bird feeder.

- **Cereal Feeder:** String doughnut-shaped cereal on a long piece of yarn or pipe cleaners. Tie the ends of the yarn together and hang.

- **Stale Bread Feeder:** Press cookie cutters into pieces of stale bread. Hang the bread shapes from string.

Butterflies - Most butterflies will stick around the garden until October. However, you can create habitat for them in the fall that will be used again in the spring.

- **Puddling Station:** Butterflies drink and extract salts from moist soil and "puddles." Create your own butterfly puddle by placing a shallow pan on or in the ground to collect rainwater. Include flat stone that allow butterflies to perch at the water's edge safely. Puddling stations may also attract animals such as amphibians.

Insect pit traps?

Scarecrows

Objectives

- Explain the purpose of a scarecrow in the garden

Materials (for one scarecrow)

A small bag, pillow case, t-shirt, or shopping bag (head)
Two old rake/shovel handles or two thin boards
Old buttons (plus needle and thread or hot glue) or permanent markers (face)
Shirts (at least one long sleeve)
Pants or overalls
Old hat
Gloves (optional)
Straw, hay, leaves or other filler
Rope or twine or screw plus screwdriver
Safety pins

Background

Scarecrows, an icon of rural America, have global roots that reach to ancient times. Folks have used them for centuries to scare common crop predators and pests (especially crows). Not all scarecrows resemble people, but most modern day versions do.

Greek farmers are credited with creating the first scarecrows that resembled a human figure more than 2,500 years ago. These ancient innovators carved wooden statues to look like Priapus, the

son of the god Dionysus and the goddess Aphrodite. These homely statues were used to protect their crops and gardens from marauding bands of birds.

Japanese rice farmers and processors have used scarecrows (kakashis) to keep the rice birds at bay for centuries. These scarecrows were created from old rags, rotten meat or fish hanging on bamboo poles. The smell was so foul that birds and other animals stayed away. More recent kakashis have been given a human-like figure – some even carry weapons such as bow and arrow … and many no longer smell so bad.

In North America, Native American people used scarecrows or bird scarers. Bird scarers were often men who howled and shouted if crows came into the cornfields. In some groups, men were considered to be unreliable and easily distracted so young women and girls kept the crops safe. But not all native people used live scarecrows. In the 19th-century southwestern United States, Zuni children competed to see who could create the most unusual scarecrow.

European immigrants brought their ideas on how to construct scarecrows to the New World. Some German settlers called their scarecrow "bootzamon" or boogeyman. Sometimes a bootzafrau or boogey wife kept the bootzamon company at the other end of the field. When grain was in short supply, farmers also offered bounties for dead crows. In fact, so many crows were killed in the 1800s it created another problem. And as insect and worm damage to crops skyrocketed, farmers went back to using scarecrows instead of a bounty to control the birds. English immigrants often created figures stuffed with straw, topped by heads carved from turnips or gourds. By the 1930s, the traditional scarecrow, with a painted face and patches on its overalls, was a common sight on American farms.

Scarecrows are still used throughout the world, but in North America they have largely disappeared in favor of chemical sprays and other more efficient bird-control technologies such as LP-gas cannons. In recent years, scarecrows have been used mostly for decoration, becoming a symbol of the harvest season. Our fascination with the scarecrow is kept alive with festivals and contests, but most scarecrows don't get a chance to scare crows anymore.

Procedures

Start the club off by having a conversation about scarecrows.

Q: What does a scarecrow do?
A: Scare birds and other animals away from gardens and fields so they do not eat the seeds and plants
Q: What does a scarecrow look like?
A: People – but not always!
Q: When do you think the first scarecrow was used?
A: A long, long time ago! The ancient greeks used scarecrows that looked like people over 2,500 years ago!
Q: Why are scarecrows important?
A: Protect seeds and crops which become food for people and animals.
Q: Do big farms use scarecrows?
A: Big farms use the idea of the scarecrow, though it often doesn't look like the ones we find in backyards or small gardens. Industrial scarecrows are usually made of highly reflective metal ribbons that shimmer in the sun. Other farms use noise guns.
Did you know…scarecrows go by other names? Alternative names for "scarecrows" include: Hay-man, maypin, mog, shay, guy, and rook-scarer.

Q: Can you name a famous scarecrow?
A: The Scarecrow from the Wizard of Oz! A Supervillian in the Batman comics.

1. Take the small bag, pillow case, t-shirt, or shopping bag and create a face. You can sew or hot glue buttons to create the face or just use permanent marker. Fill the head with your chosen filler and tie or sew closed. Sew, hot glue, or tie hat onto head. A milk gallon can also be used to make the head.

2. Tie or screw the two sticks or handles or boards together like a cross.

3. Place clothes on the newly created stick cross. If using overalls, cut a hole in the crotch for the frame. Stuff clothes with filler, tie off at the ends of the shirt and pants to prevent filler from falling out. Safety pin pants to shirt if needed. Attach gloves if using.

4. Attach the scarecrow's head and place in garden!

For more scarecrow ideas:

http://www.wikihow.com/Make-a-Scarecrow

http://pinterest.com/AuntTessy0612/scarecrow-ideas-scarecrow-costumes/

Have extra time? Play scarecrow tag.

In this game, a few players represent scarecrows and the rest are all crows. The scarecrow stands in the middle of the play space, with her arms stretched out like a scarecrow. Divide the crows into two equal groups and send each group to their fence one side of the space. At the start signal, all of the crows must fly from their side to the other side beyond the scarecrows. It helps to have a touch point. The scarecrow tags as many players as she can before they reach the safety of the touch point. Anyone who is tagged is out and play continues in this manner until only one player is left. That player then gets to be the scarecrow and can name additional scarecrows.

Fall Leaves

Objectives

- You can use composted leaves to improve your garden, trees and lawn.

Materials

- Drawing paper (white works best)
- Crayons without wrappers
- Leaves, weed, dried plants, etc.

Background

What a waste!

Every autumn, trees rain down nutrient-rich leaves that can improve our gardens, fortify our trees and shrubs and make our lawns luxuriant. And what do people do with this bounty of nature? They rake the leaves up and burn them or, worse, bag them and dump them illegally.

Leaves make great fertilizer and wonderful mulch. They build topsoil or humus. It's a simple formula: year after year, the trees shed the materials you need to make your yard or garden more beautiful. All you have to do is use them.

Sometimes leaves require special handling, such as composting or chopping, but all leaves can be recycled. The rest of this article both tests your knowledge about leaves and provides you

with the latest information about reusing leaves. See how many questions you can answer correctly.

You have to wait three years until leaves rot into leaf mold before you can use them in flower or vegetable gardens.

False. November's leaves can be dumped onto perennial beds, under trees or into a compost heap. Annual flower or vegetable gardens should be cleared of frost-killed vegetation (compost it), sown to a cover crop like annual rye or hairy vetch and left to grow all winter. The cover crop should be dug or tilled in the spring, and two weeks later seeds may be sown.

By the time long-season crops like corn or tomatoes are about 10 inches tall, the rough compost from the previous November's leaves may be spread 4 inches thick between the rows. It will pack down to about 2 inches thick, and can be dug or tilled in during the fall, before the new cover crop is sown, or in the spring. Freeze/thaw cycles, earthworms and other soil decomposers will help break down the leaves even further. Garden soil will turn black and rich in organic matter and fertility.

Procedures

Name that Leaf

Fall is the best season to gather different types of leaves and identify them with your children. Teaching them the types of trees, shrubs and plantings surrounding your home can help inspire their connection with nature.

Leaf Rubbings

1. Write your name on a sheet of paper.
2. Lay down an unmarked sheet of paper and arrange your leaves and other plant materials on it. Experiment with moving them around until you find an arrangement you like.
3. Carefully place the sheet of paper with your name on it on top of your leaf arrangement.
4. Hold on to the papers so they don't slip, and, using the side of a crayon, rub it across the top paper until the shapes of the leaves start to show. Continue to rub until you get the effect you want.
5. You can vary the effect by changing crayons to a different color and by moving the arrangement around then repeating the coloring process.

Events

Open Arboretum

Saturday, September 28 @ the Community Arboretum at Virginia Western Community College, 9am-2pm – This free, informal spotlight of a local arboretum is hosted by the Roanoke Master Gardeners and VWCC.

Nature Journaling

Sunday, November 10 @ Mill Mountain (meet at the parking lot near the Discovery Center), 1-3pm – This free event is part of the Roanoke Valley Reads program. It is recommended for children ages 8-10.

http://teamnutrition.usda.gov/Resources/gardendetective.html

http://teamnutrition.usda.gov/Resources/dig_in.html