

Fall Gardening and Flower Bulbs
Nature's Crossroads Educational Reference Fall 2009

Hands On Activities

Bulb Dissection (20 minutes)

Turn your students into naturalists and trained observers studying the common yet intriguing flower bulb! Onion sets are probably the cheapest bulbs available but daffodil or tulip bulbs are larger and easier to handle. Magnifying glasses could be helpful.

- Give each student (or group) a bulb and an observation sheet.
- Have them do an initial sketch of the bulb's exterior, noting any special features.
- Does the bulb have a distinct smell? Color variations? Write that in the notes.
- Cut the bulb in half to view the interior.
- Draw a sketch of the bulb's interior.
- What do you notice about the interior? Any idea what makes up the bulb?

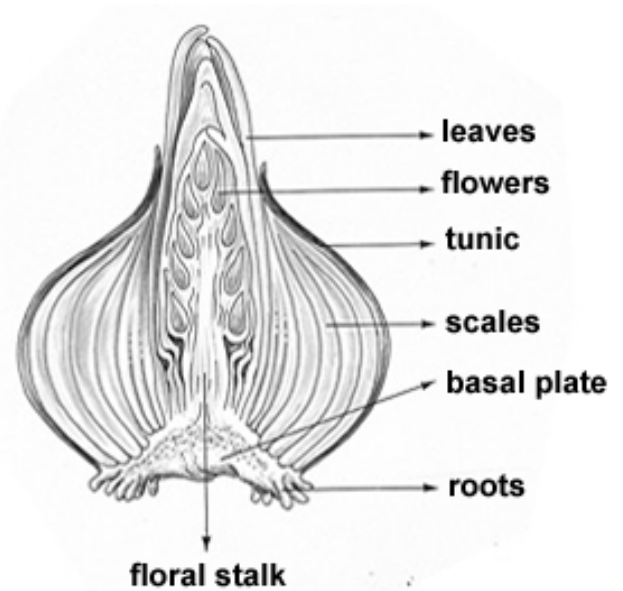


Diagram courtesy of The Bulb Project
(www.thebulbproject.com)

The Bulb Life Cycle Game (10 minutes)

This is a very silly game that teaches about the seasonal cycle of the flower bulb. Bulbs go through four life stages, similar to butterflies.

1. Dormant Bulb – squat down and wrap arms around knees
2. Rooted Bulb – stand up and wrap arms around waist
3. Sprouted Bulb – stand up and stick arms straight up in the air as a shoot
4. Flowering Bulb – stand up and hold arms in circle over head as a flower

All students start as dormant bulbs. Each student finds another student at the dormant bulb stage and plays Rock Paper Scissors (“Rock, Paper, Scissors, Shoot!” where the sign is made on “Shoot”). The winner moves on to become a rooted bulb. The loser stays a dormant bulb.

This continues through the cycle – each player finds another player at the same stage, plays Rock Paper Scissors, the winner moves up the cycle, and the loser moves down the cycle (but never lower than Dormant Bulb). So the best Rock Paper Scissors player will move directly from Dormant to Rooted to Sprouted to Flowering but most players will go backwards a couple times.

Play until about half the students have become flowering bulbs and then stop and ask the students for feedback. Emphasize that this game is not really about winning; it's about being silly and understanding the seasonal changes a bulb goes through.

Fall Gardening and Flower Bulbs

Nature's Crossroads Educational Reference Fall 2009

Lasagna Gardening (20 minutes)

What is compost? What is it made of? What is in the classroom right now that could be made into compost? Some gardeners use a technique called "lasagna gardening" to make compost right where they plan to garden next year. The key is to alternate layers of "brown" materials that are rich in carbon with "green" materials that are rich in nitrogen. Invite students to practice by either making a small lasagna gardening bed outside, making a small pile of materials on their desk (might have to provide a clean and easy "green" source), or drawing a sketch and labeling the layers.

Brown materials – cardboard, newspaper, dry leaves, sticks, sawdust, pencil shavings

Green materials – leftover food, green leaves, manure, grass clippings

Topics to Research

Dynamic Daffodil Hybrids

How many kinds of daffodils do you think there are in the world? Would you believe there are thousands of different hybrids? Some of the newest and rarest daffodil strains can cost as much as \$100 per bulb!

If you developed a new daffodil strain, you could name it. What would make a good daffodil name? Look at some flower catalogs to see what names have already been taken and see if you can come up with your own.

Tulip Mania

Did you know that for a period of time in the 1600's some tulip bulbs were worth more than houses? This happened in the Netherlands when there was a huge interest in the flowers and breeding the best and most beautiful varieties. Speculation went crazy until the market crashed, bankrupting many families.

Head to the school library or your classroom computer and see what you can find out about Tulip Mania and the history of Dutch tulips.

Flowers Demonstrate Climate Change

Check out the Journey North Tulip Project where students all around the country are helping track climate change by planting tulips, tracking their bloom dates, and sharing the information with other students.

<http://www.learner.org/jnorth/tulip/index.html>

Garlic, Nature's Healer?

Garlic is a fascinating plant that has been used in cooking around the world for many generations. Many people also believe that garlic has special healing powers. It definitely has a strong smell; do you think it has powers too? What do you think it might do (besides repelling vampires)? Do some research at the library or on the Internet to see what you can find. (Look for some tasty recipes while you're at it!)

Seed Stratification

There are some seeds that perform best when planted in the fall and allowed to experience winter conditions. These seeds need to go through a cold period in order to experience "stratification" where the protective seed coating is worn down to make it easier for the seed to sprout in the spring. Some gardeners will simulate these conditions by storing seeds in a freezer. Another technique is notching the seeds to create a hole in the seed coat, encouraging sprouting. Which seeds need these techniques the most? What sort of climates do they come from? Do you know of any seeds that require different conditions to sprout, such as experiencing fire or being digested by an animal?



Putting Your Garden to Bed for the Winter

Nature's Crossroads – September 2009
Questions for the "Gardening Guys" Video



Drawing Challenge

1. Draw a picture showing how to plant bulbs.
How deep should they be? How far apart?
Which direction should the pointy end of the bulb go?
2. Draw a picture of how to put your garden to bed for the winter.
What tools will you use?
What will you add to the soil?
3. Draw your favorite spring flower.
Is it a daffodil? Tulip? Crocus? Something else entirely?



Vocabulary – Match the words and definitions

- | | |
|----------------|-------------------------------------------------------------------|
| Bulb | a. A bulb with a strong flavor often used in pizza sauce |
| Corn | b. It comes from animals and makes a great fertilizer |
| Stratification | c. A baby flower wrapped in many layers of food-storing leaves |
| Crocus | d. One of the first flowers to bloom, even in snow! |
| Garlic | e. Trees that lose their leaves in the winter |
| Deciduous | f. A modified piece of stem with no layers that can grow a flower |
| Manure | g. The process of chilling seeds to thin their seed coats |

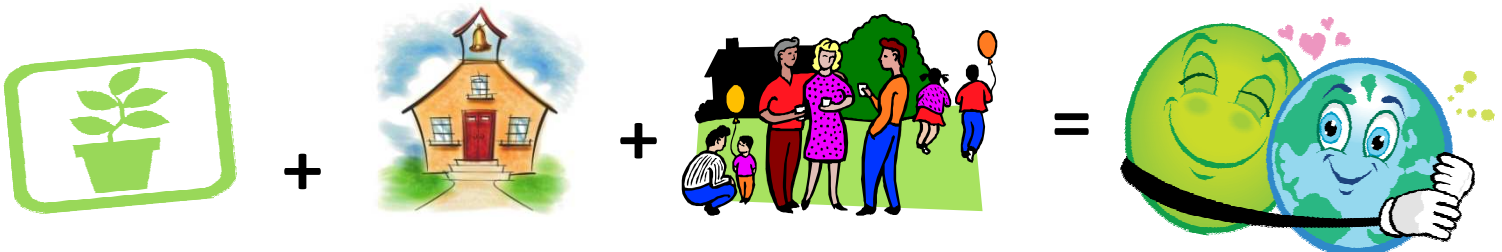
Analysis – Dig a little deeper

Why is it good to have a garden? Do you think growing flowers is as important as growing food? Why do people plant flowers? What are the benefits?

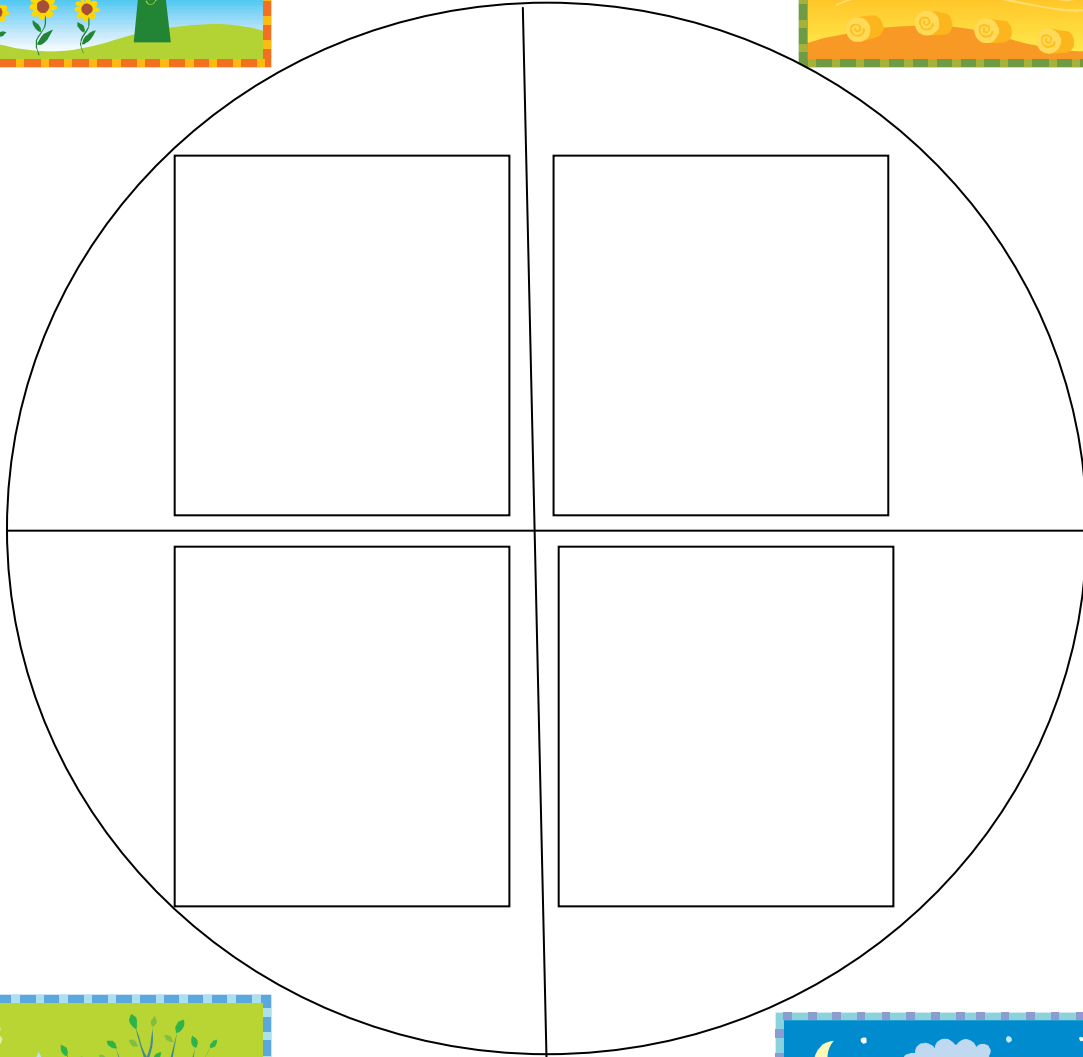
Be a Garden Planner

Picture the Clear Creek Garden or the garden at your house. What plants would you like to grow? Where would you put them? How would you decide where to put which plants? Draw your garden layout for next year showing what to plant where.

Bonus: Measure the size of the garden and calculate how many square feet you'll have of each kind of plant. (This will help you determine how many plants you need.)



Draw the Life Cycle of a Bulb!



Saving the World in Your Own Backyard!

Growing Naturally and Buying Locally