Second Grade Spring Lesson

Pollinator Flower Garden

Objective:

1) Students will learn the role of flowers and pollinating birds and insects in the garden and that different pollinators have different needs.
2) Students learn the lifecycle of the butterfly and that butterflies have different needs during the different stages of their life.

California State Content Standards:

1) Science—Life Science

2. Plants and animals have predictable life cycles. As a basis for understanding this concept:

b. Students know the sequential stages of life cycles are different for different animals, such as butterflies, frogs, and mice.
c. Students know many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.
d. Students know there is variation among individuals of one kind within a population.
e. Students know light, gravity, touch, or environmental stress can affect the germination, growth, and development of plants.
f. Students know flowers and fruits are associated with reproduction in plants.

Lesson Outline:

A. Lesson
   a. What is a Pollinator?
   b. How do you attract a Pollinator?
   c. Lifecycle of a Butterfly
B. Garden Rules
C. Planting Plans
D. Plant

Seeds/Supplies:
Suggested varieties--any combination of quick growing plants in various colors and variety will work. Plant in blocks of color for best impact and rainbow look.

Pink: Cosmos, zinnia, bee balm, aster
Red: Red sunflower, zinnia, sages (Salvia)
Orange: calendula, marigold, milkweed (monarch caterpillar food), Mexican sunflower (Tithonia)
Yellow: Dill, black-eyed susan, gallardia, marigold, coreopsis
Blue/Purple: Bachelor's Buttons, verbena, cupid's dart, pincushion (Sciabiosa), coneflower (Echinacea), sages (Salvia)
White: Yarrow, cosmos, Shasta daisy

**We recommend planting seedlings started indoors 6-8 weeks prior or purchasing nursery transplants. Depending on the weather and conditions, some flower seeds germinate/grow slowly, and you may not get sufficient flowers by June if you sow seed directly in spring.

Lesson:
Pollinators are insects and animals, such as bees, butterflies, flies, hummingbirds, and moths, that serve an important role in the garden.

1) Pollinators do their important work without even knowing it!
   a. Pollinators seeking nectar from flowers for their own food pick up pollen on their bodies.
   b. When they fly to the next flower, they spread the pollen to those flowers, which is called "pollinating" the flowers.
   c. Pollinating the flowers helps the plants because plant flowers must receive pollen from other plants in order for the plants to reproduce by making new seeds.

1) Pollinators are attracted to flowers by two things:
   a. Color of flowers—pollinators flying by see bright colors in the garden. Many pollinators are picky eaters and will go to only one color of flower, such as monarch butterflies which like orange or yellow. Night blooming flowers are usually white so that the night pollinators (such as moths) can see them in the dark.
   b. Scent of flowers—the sweet smell of flowers attracts passing pollinators. Night-blooming flowers like jasmine use very strong scent to attract night pollinators.

2) Different pollinators like different shaped flowers. Butterflies need a landing pad—big wide-faced flowers such as cosmos or dill or yarrow to land on so they can drink the nector. Hummingbirds like deep flowers that make use of their long skinny beaks.

3) Butterflies are unique types of pollinators because they have a special lifecycle.
   a. Lifecycle: They lay their eggs in the garden, the eggs hatch into caterpillars, the caterpillars eventually form a chrysalis, and finally the chrysalis opens to release the new butterfly. (THIS IS THE MOST SIMPLE DESCRIPTION OF THE LIFECYCLE—WE DO NOT HAVE TIME DURING OUR LESSONS TO TEACH A COMPLETE LESSON ON BUTTERFLY LIFECYCLES).

b. To attract butterfly pollinators to the garden, the garden must feed both caterpillars and butterflies —leaves for caterpillars/flowers for butterflies. Dill, marigold, zinnia and yarrow are good plants because they feed both. Monarch caterpillars only eat one type of food—milkweed—so monarchs will only lay eggs on milkweed plants.

Planting Directions:

Planting seeds:

1) Make rows 6 inches apart and ¼ inch deep.

2) Plant seeds by placing in row 1 inch apart—most seeds are very small like lettuce or carrots. Bigger seeds (Mexican sunflower, cosmos) can be planted 2 inches apart. Do not have students dig a hole for their seeds.

3) Have students pinch and pat to cover rows after they place seeds.

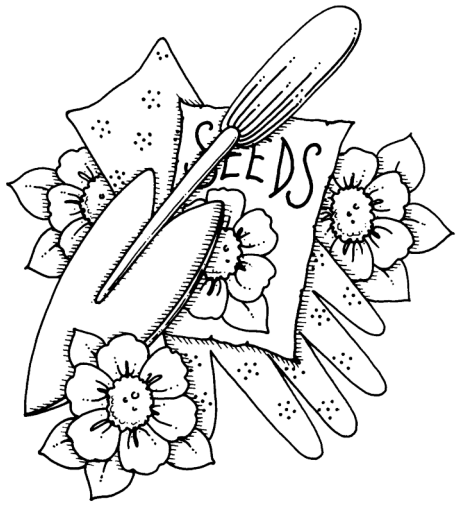
Planting seedlings: BEST TO DEMONSTRATE THIS IN GARDEN BEFORE LETTING STUDENTS PLANT

1) Follow spacing recommended for each variety.

2) Have students dig hole as deep as seedling pot and 1 inch wider.

3) Demonstrate to students how to remove seedling from container—turn upside down with fingers on either side of seedling and tap bottom of container until seedling comes out. REMIND THEM NEVER TO PULL OUT BY STEM!!

4) Place seedling in hole and gently pat in dirt all around.



Teacher Information

Second Grade Spring Lesson

Pollinator Flower Garden

Today your class will be planting their spring garden to attract pollinators such as butterflies, bees, and hummingbirds. The goal is to plant a garden of colorful flowers that will lure in the pollinators. Please take a moment with your class in the next few days to note how many pollinators are in the garden area at the beginning of the growing season. If the garden does not have any flowers in bloom, you should not see very many. As the season progresses and the flowers come into bloom, visit the garden regularly to compare the number of pollinators you see as the flowers come into bloom.

Please remind your students not to pick the flowers. If the flowers are gone from the garden, the pollinators will not come! You may want to have them make "Do Not Pick the Flowers—Pollinators at Work!" signs to remind others as well.

Due to time constraints, we provide only a very simple review of the butterfly lifecycle during this lesson. We hope that you will use this lesson as either a beginning for or a review of a more detailed study of this fascinating process.

California State Content Standards:

1) Science—Life Science

2. Plants and animals have predictable life cycles. As a basis for understanding this concept:

b. Students know the sequential stages of life cycles are different for different animals, such as butterflies, frogs, and mice.

c. Students know many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.

d. Students know there is variation among individuals of one kind within a population.

e. Students know light, gravity, touch, or environmental stress can affect the germination, growth, and development of plants.

f. Students know flowers and fruits are associated with reproduction in plants.

c. Students know how to identify major structures of common plants and animals (e.g., stems, leaves, roots, arms, wings, legs).

Please visit the garden regularly to watch your garden grow! Hold an Open House in June to talk to your students about their garden.