

## **Garden Lesson**

**Topic:** Pests in the Garden

### **Learning Points:**

- There are good pests and bad pests
- You can not totally prevent pests, but hopefully can lessen their harm to the garden by taking proper steps.
- Being observant and regularly checking the garden for pests is important in controlling bad pests.
- Using nature and organic solutions to control pests is better for plants and environment than using chemicals.
- There are many reference materials to help control pest problems.

### **Common Core Standards:**

Science: K-LS1-1: Use observations to describe patterns of what plants and animals need to survive.

Science: K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

Science 2-LS4-1: Make observations of plants and animals to compare the diversity of life in different habitats.

Science 3-LS3-2: Use evidence to support the explanation that traits can be influenced by the environment.

(Apply to the method used in watering and caring for plants and its impact on plant development)

Speaking and Listening K-SL3 thru 3-SL3: Ask and answer questions.....for understanding.

### **Items Needed:**

- One pad of paper or clipboard with paper and pencil for each group of 3 to 5 students.
- (Optional) One magnifying glass for each group of 3 to 5 students
- Washing facilities and supplies

### **Preparation:**

Review website: <http://www.ipm.ucdavis.edu/PMG/menu.homegarden.html> to gain familiarity with possible resources to identify pests and answer any questions that might arise during or after this lesson.

### **Begin Class Lesson**

Start at a teaching station in the garden, weather permitting.

#### **Statement:** (2 minutes)

Now that our plants are growing we must watch over them to make sure that they grow and produce a good harvest. This means checking to make sure the plants get adequate water, are thinned where necessary to maintain proper spacing, and unwanted weeds are removed. In addition we need to protect our plants from unwanted pests that would harm our crops.

**Questions to create attention/interest: (5 minute)**

- Have you seen any animals in the garden? How about bugs?
- When you saw them, what were they doing? (crawling, flying about, digging, etc.)
- Why do you think they come to our garden? (eat our plants or eat other animals or bugs; find a place to live; find a place to lay their eggs; or simply they are attracted to the colors and smells)
- Do you think the animals and bugs help the plants in our garden? (yes/no) Explain why. (some do and some don't)

**Introductory Statements: In classroom or garden (1 minute)**

- We need to determine whether an animal or bug that we find in our garden will help or hurt our plants and trees.
- If we can identify those pests that hurt our garden then we can find ways to prevent them from doing as much harm.

**Question: (1 minute)**

- Do you think we can keep all bad pests out of our garden? (no)

**Statement: (1 minute)**

- We can certainly take steps to prevent bad pests from doing a lot of damage, but it is unlikely we can totally prevent them from damaging some of our plants.

**Question: What are some of the steps we can take to prevent bad pests from damaging our plants?**

**Statements: (3 minutes)**

- Keep our plants healthy because many bad pests will only attack weak or young plants.
- Protect young plants by raising them in a protected area (inside or under a protective cover outdoors) until they can better defend themselves
- Make sure the plants have a good quality soil with adequate amounts of nutrients
- Make sure the plants have an adequate amount of water
- Since some bad pests live in the soil we can carefully till (mix up) the soil to remove any unwanted weeds and pests
- One of the most important things we can do is regularly inspect the plants and the surrounding areas for any signs of animals, bugs, and damaged plants.
- Some plant damages would be curled, discolored or partially eaten leaves. Another might be plants that are wilting (drooping), especially when others are not.
- A lot of bad pests like to hide on the underside of leaves so they are protected against their enemies.

**Question: Once we find bad pests, what do we do?**

**Statements: (2 minutes)**

- We yell really loud and run away!!! (NO-not really!!)
- We look closely at the pest and try to describe it's size and what it looks like. We might want to draw a picture of it or take a photo of it.
- We look around to see if there are more of the same or other pests and note what plants they are on.
- We ask someone who might know or we look it up in one of many reference sources to identify if it is really a bad pest or a good pest and how we should treat it.
- We look for the best method of getting rid of bad pests. This might include simply picking the pest up and placing it in a pale of water. It might mean using a solution of slightly soapy water in a pressure sprayer to spray the pests off. It might mean that we have to find a specific natural (organic) solution that will work. The last resort would be to use a chemical solution, but we would need to be very careful on how we use it, especially if we are putting it on or near plants that we plan to eat.

**Question:** What about animals like gophers and birds. How do we protect our plants from them?

**Statements:** (2 minutes)

- Usually we would use barriers or frightening devices to keep them away
- We installed wire netting under our raised beds to keep gophers from eating our vegetable plants.
- We could use netting over our vegetables, fruit shrubs (Blueberries) and trees to keep birds away.
- Also we could place a visual repellent such as streamers or "scare-eye" balloons to frighten birds from an area.

**Garden Activity:** (20 minutes)

**Statement:**

- Now that we have planted our garden, a very important task is to keep our eyes open for signs of pests in the garden.
- If we can catch and remove them early then they won't do very much harm.
- Let's see how many different animals and bugs we can find in the garden.

**Instructions:** (5 minutes)

1. Break up into groups of 3 to 5 students with one student in each group having a pad or clipboard with paper and pencil(s).
2. (Optional) Provide each group with a magnifying glass for closer inspection of small pests.
3. Ask each group to find an animal or bug. The animal or bug might be on a plant or tree, on the ground, in the ground (but no digging up plants) or in the air.
4. Once you discover a pest, the group talks among themselves about what it looks like and they write down a description (or draw a picture). They also decide if it is a good or bad pest. Lastly, they note how many of the same animal or bug are in the immediate area.
5. Note: They may not know the name of the animal or bug, but that's OK. We can look it up later that day or another day.
6. The groups come back together and share what they found.

**Wrap Up**

**Questions:** (3 minutes)

- Raise your hand if you think you found a good animal or bug. Why do you think this?
- Raise your hand if you think you found a bad animal or bug. Why do you think this?

**Statement:** (1 minute)

- If we can't identify the animal or bug we will do some research to find out whether it is a good or bad pest and what we need to do to protect our plants and trees if it is a bad pest.
- As our plants grow our job is to keep a watchful eye out to make sure the plants stay healthy so that we can enjoy the garden's beauty and the food we grow. Hopefully in the next month we will be able to eat some of the crops we are growing.

**Clean Up**

**Return to class**