

# COGA LESSON PLAN

**Title:** Creating and Maintaining a School Garden

**Grade level:** 6, 7, 8

**Time Frame:** 45 Minute Introduction to year round school service project

**Standards Connection:** Middle School Standards 6-8

**Expectations:** In the first 45 minute session the students begin to explore what it takes to build and maintain a garden in Colorado. The objectives of the total project are to maintain an ongoing garden that produces food for the Food Bank. The garden will be maintained in the summer by student, parent, and teacher volunteers.

**Inquiry/Essential Questions:** What does it take to build and maintain an ongoing and productive vegetable and fruit garden in the school's microclimate? What plants can be grown here? What are the soil requirements? What are the water requirements? What are the costs? How can the school finance the project?

**Materials:** For the first 45 minute session all students will have a pencil and a composite notebook labeled School Garden with their name on it.

The teacher will have images on his/her computer of fruits and vegetables from around the world, a large map of the world with climate zones and a large map of Colorado with climate zones, and a topo map of Colorado, and a topo map of their local schools quadrangle and a growing season map. In addition the teacher will have real fruits and vegetables.

**Teacher Background:** The teacher will have contacted the local extension service and gathered materials on local conditions and methods for gardening. The teacher will have interviewed a master gardener.

**Getting Started/Motivation/Warm-up/Hook:** The teacher will walk around a closed box of fruits while eating a peach, letting the juice run down his/her chin. He will say, "Man, this is so good. I love peaches. They are my favorite fruit. I'll never forget eating the peaches from my grandma's tree. So, what is your favorite fruit? Maybe I have it here in this box. Please write it down in your notebook. While you're at it, write down your favorite vegetable. I may have it in here too. By the way, you can't say, I hate vegetables. If you're not a vegetable lover, pick one you can tolerate.

OK, let's go around the room and share what our favorites are. Each child gives his or her favorite and a memory of why it their favorite. (family picnic, dinner with grandma, juicy, tart, etc) Then the teacher tosses a fruit to that student, and veggie if appropriate.

### **Lesson Development Activities:**

1. The teacher then introduces the project of the garden and gives direct instruction, using the maps, on climate, growing seasons and so forth. He gives out handouts from the Extension Service and climate maps.
2. The teacher then splits the class into groups and asks them to determine which fruits and vegetables they can grow in their microclimate.
3. The group recommendations are handed in and there is a brief discussion of the group ideas.

**Closure:** Homework-At dinner tonight ask your parents to give you some food memories and their favorite foods. It is due tomorrow.

**Assessment:** Subjective evaluation of group and individual work during class and the quality of homework the next day.

**Extensions and spin offs:** This first lesson can lead into the establishment of a permanent garden for the school. The following list of lessons would lead to the establishment of the garden: 1.Using GPS technology determine the best location for the garden. 2. Test the soil in the garden area for NPK. Lesson on nutrients and their potential for pollution. 3. Using the first lesson develop a list of crops to be grown. Show the difference between perennial and annual crops. 4. Establish a compost-Aerobic vs. anaerobic decomposition. 5. Study methods of cropping-plowing vs. no till for example-Relate to CO2 emissions. 6. How to plant crops-aspect and plant height. 7. Irrigation 8. Insects. 9. What do we do with all of these vegetables? 10. Sustainability-How does the garden remain sustainable?

**Related Lessons:** 1. Compare the growing season in eastern Colorado to the Western Slope. What factors make the differences? 2. Soils-Why will an Oak tree of the same species grow to 80 feet in eastern Kansas but to only 20 feet in eastern Colorado with the same irrigation? 3. Can Colorado produce enough food to feed its population? 4. Where do fertilizers come from? 5. Greenhouses-Can artificial environments increase food production and if so at what cost, environmentally and economically? 6. Solar Radiation-Compare cabbages grown in Alaska vs. cabbages grown in Colorado during the same season. 7. Where does your food come from? Survey. 8. World food trade-Map how food travels the globe. 9. Year end celebration-Kids bring in their family's favorite dish.