



Fourth Grade Fall Lesson

California Agriculture Salad Garden

Objective:

Students will learn how important California agriculture and farmers in their daily life and for the rest of the United States and the world. They will learn about the different California agricultural regions and why they are important.

California State Content Standards:

1.) *Life Sciences*

2. All organisms need energy and matter to live and grow. As a basis for understanding this concept:

- a. Students know plants are the primary source of matter and energy entering most food chains.
- b. Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.
- c. Students know decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.

3. Living organisms depend on one another and on their environment for survival.

As a basis for understanding this concept:

- a. Students know ecosystems can be characterized by their living and nonliving components.
- b. Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.
- c. Students know many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.
- d. Students know that most microorganisms do not cause disease and that many are beneficial.

2) *Social Sciences*

4.1 Students demonstrate an understanding of the physical and human geographic features that define places and regions in California.

3. Identify the state capital and describe the various regions of California, including how their characteristics and physical environments (e.g., water; landforms, vegetation, climate) affect human activity.
4. Identify the locations of the Pacific Ocean, rivers, valleys, and mountain passes and explain their effects on the growth of towns.
5. Use maps, charts, and pictures to describe how communities in California vary in land use, vegetation, wildlife, climate, population density, architecture, services, and transportation.

Lesson Outline:

1. Define Agriculture
2. Agriculture is important in student's daily lives.
3. Agriculture is an important industry in California.
4. California agriculture is important for the entire United States and the world.

Seeds/Supplies:

Seeds:

Carrots – Nante or Babette

Cabbage

Lettuce – Two to four visibly different varieties (color and shape of leaves), i.e. Red Sails, Black Seeded Simpson, Lolla Rossa, Quatre Saisons, Oak Leaf

Broccoli – DiCiccio

Onion Bulbs – red, yellow or white

Peas – Sugar Snap (Cascadia) or Snow Pea (Oregon Sugar Pod I or II)

Spinach – Bloomsdale

Transplants (optional):

Edible Flowers—Pansies or violas of different colors

Lesson:

Today we are planting a special salad garden that will teach us about California Agriculture. Farming and California agriculture is very important in your daily life, as well as in the lives of people throughout the US and the world.

1. Definition of Agriculture: practice of growing or raising plants or animals for our use or consumption—farming of fruits and vegetables, raising livestock or dairy cows for milk, meat and leather; forestry and nurse plants for landscaping and floral markets.
2. Agriculture is a huge part of your daily life. In many ways, agriculture has touched your life today through the food you eat, clothes you wear, and things you do. Let's walk through your day and see all the agriculture links
 - a. Wake up in the morning—sleep on cotton sheets; put on clothes of cotton, wool, and leather shoes; brush your teeth with toothpaste or use lotion that have plant ingredients (seaweed in toothpastes, herbs for flavoring or scent, vegetable oils in lotions).
 - b. Breakfast—all food and drink—orange juice, milk, eggs, wheat or corn in cereal, wheat toast, strawberry jam
 - c. Drive to school—leather or fabric seats
 - d. At School--paper you write on and in books, ink in your pens, wood tables, wood in buildings, lunch you eat.
 - e. Afterschool--leather soccer balls, any snacks, etc.
 - f. Yet, only 2% of U.S. population grows all these agricultural items for the rest of us!
3. Agriculture is a very important industry in California.
 - a. Quiz: True or False

- i. Agriculture is one of California's leading industries --True.
 - ii. California is the #1 farming state in the United States --True.
 - I. California produces almost double the value of crops as Texas, which is the #2 farming state.
 - b. If California was its own country (like France or Germany, instead of part of the United States), California would be one of the Top 5 agriculture producing countries in the whole world!!
 - c. Why is California such a big agricultural state? Mainly because of our weather. We can grow many vegetables all year long. In most other states, such as Ohio or Massachusetts or New York or Colorado, you can not grow vegetables in the winter because the ground freezes. Those states must import their vegetables from California or other countries during the winter season.
 - i. Some fruits and vegetables harvested year round in California: lemons, artichokes, avocados, broccoli, cabbage, carrots, cauliflower, lettuce, spinach, celery, mushrooms, squash.
 - d. California agriculture is also very big because California is such a large state with diverse geography in its various regions—each region can produce different crops because it has such different climates. Below are some important crops in each region.
 - i. Southern Coast—lettuce, strawberries, oranges, broccoli
 - ii. Southern Interior—desert—cattle, alfalfa and wheat and other grains, melon, lettuce
 - iii. Central Valley—grapes, poultry, cotton, tomatoes, almonds, peaches, cattle, oranges, beef, milk, pistachios, walnuts,
 - iv. Central Coast—artichokes, lettuce, broccoli
 - v. Northern Coast—cattle, sheep, apples, pears
 - vi. Northern Interior—rice, forestry, cattle, apples, pears
4. California Agriculture is important nationwide and worldwide.
- a. What do all of these items have in common? California produces 99% of all of these crops that are grown in US. For some crops, we produce the large majority of that crop for the rest of the world.
 - 1. Almonds (80% of total world production)
 - 2. Artichokes
 - 3. Dates
 - 4. Figs
 - 5. Kiwi
 - 6. Olives
 - 7. Pistachios (2nd Largest producer in world)
 - 8. Pomegranates
 - 9. Raisins
 - 10. Prunes (70% of total world production)
 - 11. Walnuts (60% of total world production)
 - b. California produces 75% or more of many crops consumed in U.S.: lettuce, broccoli, carrots, tomatoes, melons, grapes, strawberries.
5. Today we are planting some of the vegetables that grow year round in California.
- a. Carrots, cabbage, lettuce, spinach, peas and onions
 - b. Edible flowers—great in our salads and they represent an important type of coastal California agriculture—nursery plants and flowers

Garden Rules:

- 1. IMPORTANT REMINDER** Plants can be poisonous: Plants and flowers in the school garden are safe for eating because we plant them specifically for food and do not use any chemicals or pesticides that would be harmful if eaten.
 - Children must NEVER eat a plant or flower they find growing anywhere at school, home or in their neighborhood unless their parent or another responsible adult says it is ok!!!
 - Many plants are VERY POISONOUS. Plants are tricky because many look alike. You may think it is a plant that is safe to eat, but it may not be.
 - Many people put chemical pesticides on their plants to kill bugs or give plants special food called fertilizer that is safe for the plants, but not safe for people. These chemicals are NOT SAFE for people to eat!!!
- 2. Quiet voices, no running**—do not disturb the creatures in the garden or the students in nearby classrooms. The garden is a classroom just like all the other classrooms at school. All the same rules apply as in your classroom, such as no running, yelling, or climbing.
- 3. Listen to instructions** and plant as you are told or your plants may not grow. If you plant too many seeds or put the seeds in the wrong place, your seeds will not grow.

Planting Plan:

- You will each get to plant one type of seed or plant.
- We will assign each of you the type of seed or plant you get to plant.
- We will tell you where and how to plant your type of seed or plant.
- It doesn't matter what you plant today—the entire class will share the garden.
- HAVE FUN!!!

Planting Directions:

For all seeds: Make rows 6 inches apart and ¼ inch deep. Have students place seeds 1 inch apart in row. It is easiest if you hold seeds and students pinch them from your hand/cup one at a time. Do not let students dig holes for seeds—seeds will be planted too deep and will not grow. Have student pinch dirt closed and gently pat down to cover rows after they place their seeds.

For onion bulbs: Make rows 3 inches apart and ¼ inch deep. Bulbs need to be planted 2” deep, which is the depth to the students second knuckle. Demonstrate to students how to push their finger into the soil just to the first knuckle. Remind them that if planted too deep (i.e. up to the beginning of their palm), the onions will not grow. Have students make their holes in the row. Show them the difference between the top and bottom of the onion bulb (Top is pointy, bottom is dried roots). Have them place the bulbs top side up in their holes. Once all the hole are filled, have students pinch the rows closed and pat down.

For transplants: Assign 2-3 students to each transplant. Plant transplants one foot apart. Students to take turns digging hole (remind them only as deep as potted transplant), removing transplant from pot (turn upside down and tap, catching plant as it falls out vs. pulling out of pot by neck of plant), and placing in hole, adding and patting down dirt around it.



Teacher Information

Fourth Grade Fall Lesson

California Agriculture Garden



Today your 4th graders planted a California Agriculture garden. This garden features varieties of vegetables that are important California agricultural crops. Agriculture is important because it touches nearly every part of our daily lives from the clothes we wear to the food we eat. California is the most productive (and important) agricultural state in the United States. In fact, the Central Valley of California is often referred to as the “bread basket” of the U.S. Due to the moderate climate of California, we are able to plant crops year-round. Not only is California agriculture important to the U.S., but it also produces important crops that are exported to other countries. The 4th Graders planted a number of important vegetables that farmers all across California grow including lettuce, broccoli, carrots, spinach, cabbage, radishes, and onions.

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Please visit the garden throughout the season to watch the garden grow. We will plan a harvest party in several months when crops are ready.