



Third Grade Fall Lesson

Endangered Species Salad Garden

Objective:

Students learn that many of the traditional varieties of vegetables planted by our ancestors, using seeds saved and passed on each year, are in danger of becoming extinct because modern farmers plant primarily modern, hybridized seed. Students learn about the traditions of saving seed, the importance of biodiversity in our food chain, and plant and taste heirloom varieties of common salad vegetables.

California State Content Standards:

1) Sciences – Life Science

3. Adaptations in physical structure or behavior may improve an organism's chance for survival. As a basis for understanding this concept:

a. Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

d. Students know when the environment changes, some plants and animals survive and reproduce; others die or move to new locations.

e. Students know that some kinds of organisms that once lived on Earth have completely disappeared and that some of those resembled others that are alive today.

Lesson Outline:

A. Lesson

a. Our ancestors ate different varieties of vegetables than we eat today.

b. These traditional varieties, called "heirloom varieties," are in danger of becoming extinct because no one is planting them and saving their seeds each year.

c. Modern v. traditional farming.

d. Biodiversity in agriculture is important.

e. Heirloom varieties of vegetables have many special attributes.

B. Garden Rules

C. Planting Plan

D. Plant

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Seeds: Try to use open-pollinated, heirloom varieties of seeds.

Carrots – Nante, plus one of the new purple varieties of carrot if you can find the seeds! Carrots were originally all purple so this is the renaissance of a long lost variety
Radishes – French Breakfast
Lettuce – Two to four different heirloom varieties, such as Black Seeded Simpson, Lolla Rossa, Quatre Saisons, Oak Leaf, Speckles
Broccoli – DiCiccio

Transplants (optional)**:**
Edible Flowers – King James violas are an heirloom variety still commercially available

Lesson:

Today we are planting a special salad garden that we call our Endangered Species Salad Garden. This garden will teach you why certain varieties of vegetables are in danger of becoming extinct and what we can do to save them. Everyone will get to plant one type of seed or plant today.

1) Many different varieties of vegetables exist – imagine the supermarket or farmers market (take suggestions of different varieties) – all green lettuce v. red-leafed lettuce, red onions v. yellow onions, red potatoes v. white potatoes, etc.

2) Endangered Species of Vegetables – some vegetable varieties are in danger of becoming extinct.

a. Who knows what an "Endangered Species" is? (TAKE ANSWERS). An endangered species is a species of animal or plant that is "in danger" of dying out and no longer living on this earth. We think of this usually in terms of animals such as the Panda or Tiger—if the last tiger dies without reproducing a baby tiger, tigers would be extinct and there wouldnever be another tiger on this earth. This is something you will spend more time studying this year.
b. Plants can be endangered as well. We know that plants reproduce from seeds.
    i. If a plant grows in only one place and we pave that field and turn it into a shopping mall, could that plant become extinct? Yes!
    ii. What if the seeds of a certain plant never get planted, could that plant become extinct? Yes!
    iii. Seeds do not last forever—most seeds will not grow into a plant after several years. If a person collects all the seeds for a plant and never plants them, after several years those seeds will die and that plant will become extinct. This is exactly how certain varieties of vegetables, such as types of lettuce or carrots that were planted long ago, are in danger of becoming extinct—farmers are no longer planting some types of vegetable seeds.
c. We call this our Endangered Species Salad Garden because we are going to plant several of these traditional varieties of vegetables that are no longer being planted by farmers today.

3) Modern v. Traditional Farming.

a. **Farming in history--People grew their own food.** Not so long ago (100 years only!),

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there were no supermarkets—people grew all or most of their own food. There were also no plant nurseries or hardware stores like Home Depot where they could buy seeds. Families grew vegetables for themselves and to share with neighbors. They grew the varieties of vegetables that grew best on their land and that they thought tasted the best.

b. **Saved seeds.** So that they could keep growing their favorite vegetables year after year, farmers saved seeds each year to replant the following year. They did this by not harvesting the vegetables from some of their plants so that those plants could produce seeds. Then they collected the seeds from those plants and saved them in a cool, dark place until the next growing season.
c. **Travelling seeds.** If they moved, they would bring the seeds with them, and they would share their favorite seeds with friends and family. Many of the vegetables we eat today first were brought to America by immigrants who brought their favorite seeds with them from their home countries—broccoli, carrots, radishes all came to America from Europe.
d. **Heirloom Vegetables.** These old varieties are called "heirloom vegetables," which means something valuable passed down through families.
e. **Modern farmers** don't plant these old-fashioned or heirloom varieties of plants because they are no longer just growing food for their families.
    i. The food we get from the market comes from giant farms very far away from our cities. The vegetables have to be able to (1) travel great distance without rotting, (2) be strong enough to be handled by machines harvesting in the field and boxing it up for the market, and (3) be resistant to pests and diseases that are more difficult to control on a giant modern farm.
    ii. Most old fashioned varieties are best fresh picked and eaten that day so they do not work well for large farms and supermarket sales. They also may be more susceptible to certain pests or plant diseases that are more present on large farms.
    iii. Because modern farmers no longer plant these heirloom varieties, they are in danger of becoming extinct.
    iv. Problem—biodiversity in agriculture is important because if only one type of lettuce is grown and it gets a disease or pest problem, the entire crop could be wiped out and there could be food shortages. Having many varieties of vegetables growing helps ensure that no one pest, plant disease or unusual weather pattern will risk killing off all of the plants on a farm.

4) Saving Heirloom Varieties. Just like with animals, people are worried about losing traditional varieties so are working hard to save and keep growing these heirloom vegetable seeds. Also, many people are rediscovering that these heirloom vegetables taste better and are more interesting to grow. Small, local farmers grow them and sell them at Farmers Markets directly to customers; families grow them in their vegetable gardens in their yards. We are going to plant some of these heirloom varieties ourselves to see if we think they are any better. I am going to tell you how long the varieties of vegetables we are going to plant have been being grown. Remember this does not mean that the seeds we are planting are 100 years old!!! It means that people have been saving seeds and replanting the seeds each year for 100 years.

- Radish – French Breakfast; came to US from France in 1880 – over120 years
- Carrot – Nantes; came from Europe in late 1800s – over 100 years (purple carrots – carrots originally came from Persia, which is now Iraq and they were purple. Today they are reintroducing purple carrot seeds)
- Broccoli – DiCiccio; came from Italy 1890 – over 110 years

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- Lettuce – Oakleaf; Maryland and Pennsylvania 1880s, over 120 years; Speckles/Freckles – Pennsylvania in 1799, over 210 years; Black-Seeded Simpson – 1850, over 150 years; Quatre Saison (French for "Four Seasons") – from France in 1885, over 115 years
- Edible flowers – Violas and Pansies became very popular in early 1900s – over 100 years.

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. For most control, you can hold seeds and have 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 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 v. pulling out of pot by neck of plant), and placing in hole, adding and patting down dirt around it.

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