



2nd Grade Fall Lesson

Vegetable Cousins Salad Garden

Objective:

Students learn that all plants reproduce and understand that there are similarities and differences between two varieties of the same vegetable, as well as the differences between individual plants of the same variety.

California State Content Standards:

1. Science

2a: Understand organisms reproduce offspring of their own kind. The offspring resemble their parents and one another.

2d: Understand there is variation among individuals of one kind within a population.

2f: Understand flowers and fruits are associated with reproduction in plants.

If you do radish observation project:

4b: Measure length, weight, temperature, and liquid volume with appropriate tools and express those measurements in standard metric system units.

4c: Compare and sort common objects according to two or more physical attributes (e. g., color, shape, texture, size, weight).

4d: Write or draw descriptions of a sequence of steps, events, and observations.

4e: Construct bar graphs to record data, using appropriately labeled axes.

4f: Use magnifiers or microscopes to observe and draw descriptions of small objects or small features of objects.

4g: Follow oral instructions for a scientific investigation.

2. Social Science

2.4 Students understand basic economic concepts and their individual roles in the economy and demonstrate basic economic reasoning skills.

1. Describe food production and consumption long ago and today, including the roles of farmers, processors, distributors, weather, and land and water resources.
 2. Understand the role and interdependence of buyers (consumers) and sellers (producers) of goods and services.
 3. Understand how limits on resources affect production and consumption (what to produce and what to consume).
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Lesson Outline:

A. Lesson

- a. Similarities and differences among people from different families.
- b. Different types of specific fruits or vegetables are called “varieties.”

- c. Similarities and differences among vegetables and fruits of different varieties.
- d. Similarities and differences among vegetables and fruits of the same variety.
- e. Farmers choose which varieties to plant based on characteristics of different varieties and which characteristics consumers/customers will want to buy.

- B. Garden Rules.
- C. Planting plans.
- D. Plant.

Materials: At least 2 visibly different varieties of each vegetable

Seeds: Carrots – Thumbelina and Nante or Babette, or one of the new purple varieties of carrot if you can find the seeds!

Radishes – Easter Egg variety pack or Cherry Belle and French Breakfast

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 and yellow or white

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

Transplants (optional):

Edible Flowers – Pansies or violas of different colors

Lesson:

Today we are planting a special salad garden that will teach us about the many different types of salad vegetables that you can try. Everyone will get to plant one type of seed or plant today. Then, you will get to watch your garden grow for the next few months. In several months, you will have a special party where you get to harvest all the vegetables from the garden and eat a delicious salad that you grew!

We will be planting a very special type of salad garden today—the Vegetable Cousins Salad Garden. Did you know that just like people from different countries and different families can look different, plants from the same family can look and taste very different. (Pointing to different kids in the class) We are all humans, but as I look around the room I see students with _____ (identify different characteristics of students—i.e. eye or hair color, straight v. curly hair, etc). That is because you all come from different families and have different family histories and ancestors.

Similarly, types of plants such as vegetables look different. Not all lettuces are alike—at the market you may see lettuce with all green leaves, leaves with some red on them, almost all red leaves, or lettuce with straight leaves and others with curly leaves. Radishes are the same way—we think of radishes as red, but there are white radishes, half-red/half-white radishes, even some that are white on the outside and red on the inside! These different kinds may taste different as well as look different. Different colors and shapes of vegetables are called “varieties.”

All the vegetables of the same “variety” look similar because they grow from seeds from parent plants of that same variety. Vegetables of the same variety share similarities, but they also can have differences. Just like people in the same family may look alike in some ways, but not look alike in other ways, vegetables of

the same variety are not all identical. Next time you are at the market, compare the different radishes in a bunch or the different carrots in a bunch. You will see that some are bigger, some smaller, some darker in color than others, some skinny v. some fat.

A farmer must decide which variety of plants he wants to plant. When he chooses he must consider many things—including which varieties would grow best on his farm and which varieties he thinks people would be most interested in buying. The farmer makes his money only when people want to buy the vegetables that he grows.

Today we will plant several different varieties of each vegetable so that you can see and taste their differences.

SHOWS PACKS OF SEEDS AS YOU TALK ABOUT THEM AND THEIR DIFFERENCES, for example:

Carrots – We will plant carrots that look like traditional carrots (Nante) and some that are little orange balls (Thumbelina), like an orange radish.

Radishes – Cherry Belle is a traditional round red radish v. French Breakfast is half red/half white.

Note: If you plant Easter Egg, they have several varieties in one packet ranging from all purple to all white.

Lettuce – Show the different varieties you will plant and highlight the differences.

Broccoli – We only plant one variety of broccoli, but when it grows you will see it looks different than the broccoli you buy in the store. Instead of one enormous head, it will have a small central head and lots of mini-broccoli heads. (There is also purple broccoli.)

Onions – Red v. white or yellow

Edible flowers – Pansies and violas come in a variety of different shapes, sizes and colors of 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 specially 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 harvest.
- HAVE FUN!!!

Planting Directions:

For all seeds: Make rows 6 inches apart and $\frac{1}{4}$ inch deep. Have students place seeds 1 inch apart in row. 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 $\frac{1}{4}$ 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; the top is pointy, the bottom has dried roots. Have them place the bulbs top side up in their holes. Once all the hole are filled with bulbs, 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 v. pulling out of pot by neck of plant), and placing in hole, adding and patting down dirt around it.

Teacher Information



2nd Grade Fall Lesson

Vegetable Cousins Salad Garden

Today your 2nd graders planted a Vegetable Cousins Garden. This garden focuses on similarities and differences between two or more varieties of the same plant. We plant two or more varieties of radishes, carrots, edible flowers, and lettuce, along with other salad vegetables. This garden teaches to the California State Content Standards in Life Science. In addition, an expanded study program using radishes in the garden may be used to teach to the State Content Standards in Science Investigation and Experimentation and Math Measurement and Geometry. It can also be used to teach the Social Studies Content Standards in Economics on food production and competition among sellers, and connects to the year-long second grade focus on ancestors.

California State Content Standards:

1) Science—Life Science:

- 2a: Understand organisms reproduce offspring of their own kind. The offspring resemble their parents and one another.
- 2d: Understand there is variation among individuals of one kind within a population.
- 2f: Understand flowers and fruits are associated with reproduction in plants.

In addition, the radishes are a wonderful tool for scientific study to satisfy the Investigation and Experimentation Science Standards. Radishes have a thirty-day life cycle. By visiting the garden weekly, students can visually observe and their growth, stage of life cycle, and height. This study would allow the students to make a comparison between the two varieties and to master the life cycle of a plant. In addition, the students can make observations of animals and insects in the garden, weather conditions, and record soil and air temperature. The students can analyze the data they collect and look for relationships, differences, and trends.

The Radish Study supports the following California State Science Standards—Investigation and Experimentation:

- 4b: Measure length, weight, temperature, and liquid volume with appropriate tools and express those measurements in standard metric system units.
- 4c: Compare and sort common objects according to two or more physical attributes (e. g., color, shape, texture, size, weight).
- 4d: Write or draw descriptions of a sequence of steps, events, and observations.
- 4e: Construct bar graphs to record data, using appropriately labeled axes.

4f: Use magnifiers or microscopes to observe and draw descriptions of small objects or small features of objects.

4g: Follow oral instructions for a scientific investigation.

2) Math: This radish study could also be used to support State Math Standards

MEASUREMENT AND GEOMETRY

1.0 Students understand that measurement is accomplished by identifying a unit of measure, iterating (repeating) that unit, and comparing it to the item to be measured.

1.1 Measure the length of objects by iterating (repeating) a nonstandard or standard unit.

1.2 Use different units to measure the same object and predict whether the measure will be greater or smaller when a different unit is used.

1.3 Measure the length of an object to the nearest inch and/or centimeter.

3) Social Studies:

By planting multiple varieties of each vegetable, this garden can be used to support lessons on the Economic Standards. Why do farmers grow different varieties of the same vegetables? Why are scientists and farmers constantly developing new varieties of these same vegetables? Are the varieties available in markets today the same as our ancestors ate? How do different varieties create competition among food sellers? These questions relate to the following California State Social Studies Standards:

2.4 Students understand basic economic concepts and their individual roles in the economy and demonstrate basic economic reasoning skills.

1. Describe food production and consumption long ago and today, including the roles of farmers, processors, distributors, weather, and land and water resources.

2. Understand the role and interdependence of buyers (consumers) and sellers (producers) of goods and services.

3. Understand how limits on resources affect production and consumption (what to produce and what to consume).

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.