

Grade: Kindergarten

Topic: PrePreserve

Class Title: Garden Surprise

Class Overview: Students will define garden, and sort garden objects into living and non-living categories.

Learning Objectives:

- Understand the characteristics of a garden
- Use observations to sort objects
- Determine what elements are needed by living objects in the garden
- Have fun!

School Standards:

- ✓ K-LS1-1 Use observations to describe patterns of what plants and animals need to survive
- ✓ CCSS.MATH.CONTENT.K.MD.B.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count

Agenda:

Background

- Brainstorm with your students what they know about gardens. What makes something a garden? List out as many different types of garden you can think of together. What things do you find in a garden?
- Share with the students that you will be part of a year-long garden project with the Springs Preserve to learn about gardens, including visiting and working in the Teaching Garden. Throughout the project, each student will be recording what he or she learns in their Springs Preserve Journal.

Activity

- Place several garden items on the floor and cover them with a blanket. It is best to have this done ahead of time so that the students cannot see what you are hiding. Items should be a mix of living and non-living things. Suggested items include apple, potato, sandstone, quartz, trowel, carrot, small pot, etc.
- Begin by allowing the students to sit in a circle around the blanket. One at a time, allow each student to feel an object over the blanket. What shape is it? What do they guess might be underneath?

- Afterwards, allow each student to feel the object under the blanket. What describing words can they think of about the texture of the object? How does feeling the object give them clues about what it might be? Allow them the opportunity to revise their guess of what the object is, then remove the blanket.
- Tell the students that we are going to sort the objects into categories. Ask for their ideas of what categories we could use. Some options might include by size, by color, or by shape. Then share that we will be sorting items based on if they came from something once alive or something that was never alive. Living things in the garden depend on non-living things to help them grow. Examples include plants (alive) which need water and sun (not alive) or worms (alive) that need soil (not alive.) Have the students sort the objects into the proper categories, and fill out the first lesson section in their Springs Preserve Journals.

Materials/logistics:

- Living and non-living samples
- Blanket
- Journals
- Pencils or crayons
- Springs Preserve Journals

Grade: Kindergarten
Topic: Garden Science
Class Title: What Is a Fruit?

Class Overview: Students will explore the differences between fruits and vegetables, and be able to identify common fruits.

Learning Objectives:

- Define fruit
- Name three examples of fruits and three examples of vegetables
- Make observations to determine the correct category of edible plants
- Have fun!

School Standards:

- ✓ K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive
- ✓ CCSS.MATH.CONTENT.K.MD.B.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count

Agenda:

Background

- Begin by surveying the class. Who likes to eat fruits? Ask for some examples of favorite fruits. Who likes to eat vegetables? Ask for some examples of favorite vegetables. Who can name the difference between a fruit and a vegetable?
- The fruit of a plant always contains the seed. It also has a skin (the protective coating) and pulp (the mushy stuff inside.) Any other part of the plant that is edible is called a vegetable. Some things that we call a vegetable are really a fruit because they contain seeds, but we call them a vegetable because they are not sweet. Some examples of vegetables that are technically fruits include tomatoes and cucumbers.
- Show the class some common fruits and vegetables (you can bring in the real thing, show a picture, or a plastic model.) Have the students vote on if the item you are showing is a fruit or a vegetable by walking to one side of the classroom to vote fruit or the other side to vote vegetable. Talk about why each answer is true or not.

Activity

- Set up the fruit relay by laying a jump rope across the floor, placing a selection of fake foods and fruits (or fruits and food pictures) beside the jump rope, and setting two hula hoops some distance away.
- Divide the students into two teams for the fruit relay. When it is each student's turn, he or she must jump over the rope, select a fruit from the pile, and place it in the hula hoop.
- When every student has had a turn, discuss the answers with the group.

Extension

- Now that the students know what makes a fruit (having seeds), they can make some art with the seeds of a famous fall fruit. If you slice an apple horizontally through the center the seeds will make a star pattern. Show the students the pre-sliced apples. How can they determine if the item being observed is a fruit?
- Allow the students to paint the apples and use them as stamps on their Springs Preserve Journal page. The star pattern reminds us that fruits have seeds!

Materials/logistics:

- Examples of fruits
- Jump rope
- Hula hoops
- Optional: apples, paintbrushes, and paint
- Springs Preserve Journal

Grade: Kindergarten
Topic: STEM for Stems
Class Title: Plant Racing

Class Overview: Students will observe the germination and sprouting of different seeds, and measure the rates of growth.

Learning Objectives:

- Understand the role of the seed for a plant
- Define germination or sprout
- Determine what elements a seed needs to sprout
- Measure the rate of germination in different plants
- Have fun!

School Standards:

- ✓ K-LS1-1 Use observations to describe patterns of what plants and animals need to survive
- ✓ CCSS.MATH.CONTENT.K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference

Agenda:

Background

- Seeds are the method that plants use to make more plants, or reproduce. Each seed is able to grow into a whole new plant, but first it must germinate or sprout. A seed will only sprout if it has three ingredients: warmth, water, and air. Different seeds need different amounts of these things to be able to grow. The water or moisture helps the seed soften its hard protective coating so that the sprout can break through. Ask the students which part of the plant grows up to the surface (the stem or sprout) and which part of the plant grows down into the soil (the root).
- Seeing germination can be mysterious because it usually takes place underground.
- All seeds germinate differently. Some germinate quickly, and some are very slow.

Activity

- We are going to race our seeds to see which ones germinate the fastest.
- Hand each student a clear plastic glove with their name written in sharpie. Each student should also receive five cotton balls. They should

dip each cotton ball in water and squeeze it three times—too much water will drown the seed!

- Have a table with each type of seed spread out on a paper plate. You may use whichever seeds you like, but keep in mind that seeds like radishes, lettuce, and beans are known for sprouting quickly, while carrots, pumpkins, and sunflowers may sprout more slowly.
- Allow the students to tap each plate with a cotton ball. This should pick up between three to five seeds. Put each cotton ball in a separate finger of the glove.
- Tape the glove to a window where it can receive plenty of sunlight. Have your students fill out the Plant Race section of their Springs Preserve Journals.
- Check on the plants each day. Who is winning the race? Once the seeds have germinated they will need to be planted to continue growing.

Materials/logistics:

- Student journals
- Clear plastic gloves
- Cotton balls
- Seeds packets
- Tape
- Permanent marker
- Springs Preserve Journal

Grade: Kindergarten

Topic: PostPreserve

Class Title: Planting the Future

Class Overview: Students will reflect on the value of gardens as a resource, and create a seed mosaic.

Learning Objectives:

- Identify resources developed from plants
- Organize seeds by patterns and shapes
- Have fun!

School Standards:

- ✓ K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive
- ✓ CCSS.MATH.CONTENT.K.G.B.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes

Agenda:

Background

- Review with the students what the class has learned throughout the course of your teaching garden lessons. What parts did they think were the most fun? Which were the most interesting?
- Take a look around the classroom and identify everything that came from plants. Imagine what would happen if there were no more gardens? What things would be no longer have?

Activity

- Each student will be creating a seed mosaic. They should begin by drawing a simple picture of something special to them that comes from a garden. Identify what shapes are in the picture by tracing them. For example, the sun is a circle, or in a drawing of a cat the ears are a triangle. Identify at least three shapes in each picture. Then spread a line of glue over one shape, and add their first seeds.
- For students it is helpful to think as each type of seed as a color, and remind them they can only had the glue for one color at a time.
- Allow the mosaics time to harden and dry, and be sure to fill out the final section of the Springs Preserve Journals.

Materials/logistics:

- Assorted seeds

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