



Activities and Ideas: Plants, Trees, and Seeds

Mathematics

Measurement:

Take students outside to the playground with a list of plant and/or tree "items" they will find there (tree trunks, branches, leaves, seeds, flowers, etc.) and a measurement tool (ruler, yardstick, tape measure, etc.). Once outside, ask students to take measurements of the items on their list. Students could be asked to measure length, width, and circumference.

As a class, compare measurements. Who located a needle with the longest length? Who found a branch with the greatest circumference? Tailor the discussion to the ability of your students and the "items" available on your site.

Note: If measurement tools are not available for all students, string or yarn may be cut to standard lengths and used.

Sorting:

Provide each student with a small bag and take a short "field trip" around the school grounds. Ask students to collect leaves, seeds, flowers, and branches from plants that are found. Once back in the classroom, do one of the following sort activities.

- Ask students to sort the items they found individually.
- Make a chart /graph of all of the different ways students chose to sort the items they found (size, color, type, shape, texture, etc.).
- Discuss.

-or-

- Ask students to place the items they found into a single location.
- Make a list of all of the possible ways to sort the items (size, color, type, shape, texture, etc.).
- Have the class choose one or more of the options they've listed and sort the items using that criteria.

Weight:

Provide students with a balance scale and at least 3-5 different types of seeds. Using a balance scale, weigh different kinds of seeds. Prior to weighing the seeds, ask students to predict the order in weight of seeds from least to greatest. Then, test to see if their predictions were correct. Discuss the outcome.

Next, place a small math manipulative (bear or dinosaur counters) or other small object on one side of the balance scale. Choose one type of seed and "weigh" the object with it. Then, based on their earlier observations, ask students to predict how much the object will "weigh" in the other seed types. Weigh the object to test predictions.



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Graphing:

Provide each student with a small bag and take a short "field trip" around the school grounds. Ask students to collect leaves, seeds, flowers, and branches from plants that are found. Once back in the classroom, do one of the following graphing activities.

Provide graph paper for each student and ask them to create a graph of the number of plant parts they were able to locate and collect.

-or-

Tally the counts of the whole class and create a group graph of items collected.

This activity ties in very well with the sorting activity on page 1 of this idea sheet. If combined, there are multiple graphing opportunities. For example, students could sort and graph by size (small, medium, and large) or by color (red leaves, yellow leaves, and green leaves).

Note: This activity could be done using a tally sheet rather than collection bags. If this is desired, create a tally sheet for student to use as they take their "field trip" around the school grounds. Students can be asked to assist in the creation of the tally sheet by making a list of all of the plant parts that they would expect to see.

Counting:

Give each student a baggie full of seeds. Ask them to group and count the seeds:

- by 2s
- by 5s
- by 10s

If time and interest allow, combine all of the seeds into one large pile and count them all as a class using one or more of the groupings (2, 5, and 10).

Science

Celery Stalk Experiment:

This experiment will help your students see the job of stems.

Fill a cup with water and a few drops of red food coloring. Place a stalk of celery (with the leaves on top) in the water. Leave it overnight. The next day, invite students look at the celery. What do they see?

Overnight, the red water will have traveled up the tubes of the celery. The celery leaves will have turned red or pink colored water reaches them through the xylem of the plant – the path the water takes from the roots to the leaves.



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Parts of a plant:

Students can enjoy a healthy snack while learning the parts of a plant. Provide students with a buffet of plant parts: sunflower seeds for seeds, carrots for roots, celery for stems, lettuce for leaves, and cauliflower for flowers. As your students eat each plant part, discuss the jobs of each part.

Seeds - make new plants.

Roots - hold the plant in place and suck up water.

Stems - bring water from the roots to the leaves and hold the leaves.

Leaves - make the plant's food and help the plant breathe.

Flowers - make new seeds and look pretty.

Root Growth Experiment:

This experiment will help your students see root growth.

Place a wet paper towel on a cookie sheet. Place lima bean seeds on the wet towel and cover the seeds with additional wet paper towels. Have students keep the towels moist for a few days but don't allow them to peek under the towels.

After about 3-4 days, check under the wet towels. The bean seeds should have shoots and the beginnings of roots growing. After students have observed the new shoots and root beginnings, you can allow the beans continue to grow roots on the cookie sheet where your students can see them. You may also choose to plant the seeds.

Plant Needs Experiment:

Plant lima bean seeds in 4 cups. Label each cup and place it in a location so that the following conditions are met:

- Cup 1 – provide the bean seed with soil, water, and sunlight
- Cup 2 – provide the bean seed with soil and sunlight but withhold water
- Cup 3 – provide the bean seed with water and sunlight, but withhold soil
- Cup 4 – provide the bean seed with soil and water, but without sunlight

Be sure to water the seeds each day (except for cup 2).

Ask students to predict the growth of the seeds. Which will grow best? Fastest? Slowest? After a week, ask students to check the progress of each bean seed. Where their predictions correct?

Continue "caring" for each bean seed at least until the seed in cup one has outgrown its cup. Discuss the differences in the growth observed by the beans in each cup. Possible leading questions:

- What elements are needed for plants to grow? What did you see that makes you think this is so?
- What did you notice about the bean plant in cup 4? (Note: The stems and leaves will likely grow, but not be green as the chlorophyll in the plant did not receive any sunlight).



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What am I?:

Collect as many different types of plant parts as you can and provide them for students to examine, touch, and smell.

Provide students access to books, articles, pictures, and/or Internet sites about plants and ask them to identify as many of the parts as they can. Is what they are looking at the seed of an oak tree or the needle of a conifer?

If full-bore research is not practical, "What am I?" cards can be created for each item you've collected. On the card, write 2 or 3 clues about the item. Be sure to use clues that match classroom experiences and observations. Place the collection in an area so that students can walk around and explore each item.

For example:

I am rough.	Answer:
I am brown.	A conifer cone.
My job is to protect seeds.	
What am I?	

Give each student a card and ask them to locate its matching plant part!

Art

Leaf rubbings:

Ask each student to bring in a leaf (or provide a leaf for each student). Place the leaf under newsprint. Using the side of a crayon, have the students rub the crayon over the paper. They can see the outline of the leaf and veins come through on the paper.

Use the rubbings to create covers or illustrations for books about leaves, mount them on heavier paper and create a mobile, or enjoy them on a bulletin board!

Leaf placemats:

Provide each student with a rectangular piece of clear contact paper the size of a placemat and leaves or needles. Invite students to place their leaves wherever they choose on the sticky side of the contact paper. When finished, place another sheet of clear contact paper over the leaves. Print each child's name on the placemat in permanent marker and use during snack or lunch time for easy cleanup.

Seed picture:

Provide students with a bag of different kinds of seeds. Ask each student draw a simple picture with black marker. Cover the black lines with glue and have students place seeds on the glue to add texture!



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Finger Paint:

Have students use finger paint to create trees or flowers. Invite them to experiment using just a thumb or just a fingertip to make the petals on a flower or the leaves on a tree or use a spread out hand facing down to make roots of a large tree.

Paint:

Have students paint with parts of a plant or tree. Invite them to play with textures and explore the differences in painting with leaves, twigs, seeds, petals, and fruits! Which parts work best for lines? Which for filling large spaces?

Language Arts

Me? A Tree?:

Ask students to imagine themselves as a plant, seed, tree, flower, or fruit. What would their day be like? What would they see? What would they hear? Invite them to write a story from their chosen point of view!

Seed Journal:

Have students keep a journal about the seeds they plant. Each day ask them to take notes and make sketches about what is happening and what they think might happen next. Have them include the tasks they did to care for the plant as well.

Creative writing:

Introduce students to the idiom "Money doesn't grow on trees." Explain that it's a saying that people use to mean that unlike leaves – which seem to be in abundance – money is harder to come by. Then, ask them to imagine what it would be like if money could grow on trees!

Invite them to think about other items that might be fun to be able to grow on trees!

Invite students to draw a picture of their special tree and write about it. Why do they like their tree? How does it grow? What do they do with the item it grows? Would they share their tree with others?

Poet-tree:

Create a classroom poet-tree. Find a bare tree branch about 3 feet long with lots of smaller branches. Place the branch in a pail or large coffee can and anchor the branch with sand or gravel. Cut out large paper leaves from green construction paper. Have each child write a short poem about trees on a paper leaf. Attach the leaves to the "poet-tree" with thread, paper clips, or clothespins.

If you have a favorite plant, tree, or seeds activity that you would like to share with other visitors to *REAL TREES 4 Kids!*, tell us! E-mail us at design@realtrees4kids.org.