

SCIENCE:

PLANT LIFE



T.E.K.S. 119.3 (C.3)

The student classifies and identifies plants common to the horticulture industry.

Area: Plant Life

OBJECTIVE	TEACHING ACTIVITIES
1. Student will identify common plants and plant characteristics.	<ol style="list-style-type: none">1. Use a seed catalog to locate pictures of fruits and vegetables with their corresponding parent plants. Mount each picture on a separate index card and laminate for durability. Help the students match the plants with the fruit and vegetables they bear. The pictures may be supplemented with word cards. Students can then group the pictures in clusters of three: plant, fruit (or vegetable) and name.2. Organize a plant sharing day. Have students bring a plant from home to show to the class.3. Discuss that some plants lose their leaves in the fall and some others retain their leaves and color through the cold season. During the winter, take the students outside (or look out the window) to identify some of each category of plants.4. Provide one or two house plants that can be cared for in the classroom all year.5. Visit a plant nursery on a community based activity. Let students experience a variety of plants and identify common plants they have studied in their plant unit.

RESOURCES/MATERIALS

- Seed catalogs
- Index cards
- Plants



T.E.K.S. 119.3 (C.3)

The student classifies and identifies plants common to the horticulture industry.

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OBJECTIVE	TEACHING ACTIVITIES
Student will observe plants and plant growth.	<ol style="list-style-type: none"><li data-bbox="810 470 1382 590">1. Discuss the needs of plants. To make the discussion more meaningful, they can be related to needs of people. Discuss where plants grow best.<li data-bbox="810 594 1382 835">2. Visit a greenhouse to observe the plants and the conditions in which they are grown. This provides a good opportunity for students to explore the jobs and working conditions related to horticulture. Have students compare the prices of large plants and identical plants of smaller size. Discuss why the difference occurs.<li data-bbox="810 840 1382 1165">3. Provide several bean seeds for each student. (Many garden centers will donate them if they understand the purpose of the request.) Have each student sprout a bean by placing it between the folds of a damp paper towel. Everyone should plant several bean seeds in individual small containers. Put some of the containers in ideal conditions and others in adverse conditions (excessive darkness, light, heat, or cold). The growth progress should be charted carefully.<li data-bbox="810 1169 1382 1495">4. Plant rye grass seed in a milk carton. Have students watch the grass seeds grow. Water the plants as a part of daily routine. Give students a medicine dropper to use for watering. When grass is tall, cover the milk carton with manila paper. Draw a face with eyes, nose, mouth and hair. Add ears on each side, etc. (e.g., draw face on front, hair on back, ears on each side). Now students have made "Hairy Harry". Let them cut "Harry's hair" when it becomes too long.<li data-bbox="810 1499 1382 1596">5. Plant the rye grass seed in a plastic lined Easter basket so students will have live Easter grass.



OBJECTIVE	TEACHING ACTIVITIES
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6. Several vegetable and fruit tops are an inexpensive, easy, and fun to grow plants; for example, carrots, sweet potatoes, yams, pineapple. A container of water is all that is necessary to grow these “trimmings” into pretty plants. Specific instructions are as follows:

Carrot:

- a. Cut the carrot one inch below the top. Do not trim the leaves.
- b. Place the top in a saucer-like container of water. The top should not be completely submerged.
- c. Put the container in a place where it is not in direct sunlight.
- d. Within a week, the carrot top should be sprouting new leaves. Continue to keep the top moist and it will provide greenery for a long time.

Note: If the top does not show growth at the end of a week, throw it out and try again with another carrot top.

Sweet Potatoes/Yams:

Note: Make sure the sweet potato/yam is not as wide as the container.

- a. Stick toothpicks, spaced evenly around the top third, into the potato.
- b. Place the potato in a container so that the ends of the toothpicks balance on the edge of the container.
- c. Fill the container to the rim with water. This water level should be maintained.
- d. Keep out of direct sunlight.



OBJECTIVE	TEACHING ACTIVITIES
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Pineapple:

- a. Cut the crown of a pineapple off one inch below the leaves.
- b. Turn the crown upside down. Take a knife and hollow out the center to one inch from the edges.
- c. Place the pineapple top in a saucer-like container, crown side up. Fill the container with water, but do not completely submerge the pineapple top. Keep the water level constant.
- d. Keep container out of direct sunlight.
- e. As soon as new growth is apparent, the pineapple may be potted in soil.

Avocado Seed:

- a. The seed should be positioned so that the pointed end is up.
- b. Stick toothpicks into top third of seed so that they are evenly spaced around the seed.
- c. Place the seed in a container so that the ends of the toothpicks balance on the edge of the container.
- d. Fill the container with water. This water level should be maintained.
- e. Keep container out of direct sunlight.
- f. Leave the seed in water at least two to three weeks. If the bottom of seed shows no sign of splitting within that time, try again with another avocado seed.



Area: Plant Life

OBJECTIVE	TEACHING ACTIVITIES
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(Continued)

RESOURCES/MATERIALS
Items as specified in activities

7. Secure a place on the school grounds where students can plant flowers (i.e., pansies, zinnias, chrysanthemums, etc.). Require students to be responsible for the care of the flowers.



T.E.K.S. 119.3 (C.3)

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OBJECTIVE	TEACHING ACTIVITIES
3. Student will plant a container garden.	<p>Instruct students using the following procedures:</p> <ol style="list-style-type: none">1. Select container of proper size and type for plant. They can be plastic, wooden, ceramic, unglazed clay pots, or even milk cartons and coffee cans.2. Fill a bucket or a basket one third full of sterile soil.3. Add correct additional thirds of peat moss and any other additives at this point (e.g., vermiculite, sand, fertilizer).4. Mix the potting soil thoroughly with a stick or trowel.5. If the container needs charcoal or broken clay pots in the bottom for drainage, place them in bottom of container at this time.6. If the container is being prepared for seeds, bulbs, or cuttings, it can be filled to within two inches of the top.7. If planting seeds, follow the directions on the package regarding how to space and how deeply to plant the seeds. If there are no directions, plant as uniformly as possible. Seedlings may be thinned out later.8. Holes can be made in the soil by using a stick or a finger. The number and size of holes will be determined by the size of the bulb or slip.9. Place the bulb in the hole. Cover the bulb with about three inches of soil, and mash it down.10. When planting slips, follow steps 1 through 8. Gently pick up the slip by the middle of the stem and place it in the prepared hole in the soil. While holding by middle of stem, fill in hole around slip with trowel or fingers. Mash down soil around the slip. <p>Note: A slip is a small shoot or twig cut for planting or grafting.</p>



Area: Plant Life

OBJECTIVE

TEACHING ACTIVITIES

(Continued)

11. If the plant to be put into a container is already established in a can, plant the root ball. Put a small amount of soil into the bottom of new container to bring root ball two inches below the rim. Then, slide the plant from the old pot (or slit the sides if it is in a can). Place one hand under root ball and one hand on top, and remove the plant. Center the plant in the container and, while holding it with one hand, use the other hand to fill in around the sides of the root ball with the soil mix from the bucket. Mash down and firm soil around the plant with a stick of the hand.
12. Water gently so as not to wash the seeds or soil out of the container.
13. Return all materials and equipment to the proper storage areas.

RESOURCES/MATERIALS

Containers
Plants
Soil, etc.



SCIENCE:

PLANT LIFE



T.E.K.S. 119.3 (C.5)

The student describes basic plant structure and physiological processes.

Area: Plant Life

OBJECTIVE	TEACHING ACTIVITIES
1. Student will grow plants from cuttings.	1. Organize a class project to grow new plants from cuttings of mature plants. Solicit mature plants from parents, friends, staff members, etc. 2. Follow this procedure: a. Look for healthy new growth on the plant. b. Break or pinch the new growth off where it branches from the old stem, taking a small part of the old wood with the new. c. Place the piece removed from the plant in a glass filled _ full of water that is at room temperature. (Note: If slip* is very small or an African Violet, place foil across the top of the glass and poke a hole through it so that the leaf is above water.) A bed of sand kept constantly moist will also start most cuttings. d. Place the glass in a spot out of direct sunlight where the temperature remains between 65° and 75° F. e. Add a bit of fresh water as needed to keep the water level constant. f. In a few weeks, roots will begin to show. After the plant has several roots, place it in a pot. 3. Before taking the plants home, students could create booklets titled “How to Care for a _____ Plant.” They could include pictures, information on the water, light and temperature requirements and a pressed specimen of a leaf. 4. Have students use plant cuttings to make hanging baskets. The baskets can be sold as a money-making project.

RESOURCES/MATERIALS

Plant cuttings (i.e., lipstick plant, philodendron, Wandering Jew, ivy, creeping Charlie, and African violets)

* Note:

A slip is a small shoot or twig cut for planting or grafting.



T.E.K.S. 119.3 (C.5)

The student describes basic plant structure and physiological processes.

Area: Plant Life

OBJECTIVE	TEACHING ACTIVITIES
2. Student will demonstrate care of plants, according to identified needs.	<ol style="list-style-type: none">1. Place a healthy plant in front of the students. Talk about the differences in plants. Explain that plants must get proper food, water and light.2. Show the film, <u>Plants are Different and Alike</u>, (Coronet, 11 minutes).3. Introduce a new plant each day for one week. Explain the water, food and light needs of the plant. Make a plant care chart for each plant and a checklist. Develop a job board to show who is responsible for the plants and have the students check off the care given.4. Differentiate between the care needs of houseplants versus outdoor plants.5. Have a plant sale from the plants grown in class.6. Visit a local nursery, food bank farm, and see what is seasonally planted.

RESOURCES/MATERIALS

Items as specified in activities
Local nursery



SCIENCE:

PLANT LIFE



T.E.K.S. 119.3 (C.5)

The student describes basic plant structures and physiological processes.

Area: Plant Life

OBJECTIVE	TEACHING ACTIVITIES
1. Student will purchase and care for house plants.	<p>Instruct students in the following procedures:</p> <ol style="list-style-type: none"><li data-bbox="812 533 1377 680">1. Find out from the place where the plant is purchased, how much water, light and feeding it requires. Encourage students not to buy a plant unless they are sure of the care it needs.<li data-bbox="812 686 1377 1079">2. Set up a watering schedule by marking on the calendar the day the plant is watered. (Use an <u>X</u>.) Count the number of days required between waterings and mark that on the calendar with a circle (<u>O</u>). “X” off the days between waterings as they go by if necessary. When a day with a circle comes, “X” it off and count the correct number of days until arriving at the day on which the next circle should be placed. Continue this procedure unless some change in the watering is required, in which case, adjust accordingly.<li data-bbox="812 1085 1377 1318">3. Place a thermometer in the area where the plants will be kept. Check the temperature when the sun is shining on the area, when the sun is away from the area, and in the evening. If the temperatures are within the temperature required, place the plant in that spot. Repeat the procedure for each new area.<li data-bbox="812 1325 1377 1537">4. If the spot where the plant will be kept is within the correct temperature range, check the amount of light it receives. Some plants do best with filtered light; others with indirect or even full sunlight. Be sure the lighting in the desired spot agrees with seller’s instructions.<li data-bbox="812 1543 1377 1690">5. Most plants require additional fertilizer for growth and bloom. A good schedule to follow is to fertilize plants either (a) on the same date of every month, or (b) on the first Sunday of every month. <p><u>Caution: Do not overfeed plants.</u></p>



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OBJECTIVE	TEACHING ACTIVITIES
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NOTE:

Most nurseries sell small three-inch plants that have established roots and leaves. These are generally inexpensive and often can be bought on sale. If these plants are watered properly and kept in the correct light conditions, they will grow very well.

Some plants to look for are Wandering Jews, Piggybacks, Creeping Charlies, Begonias, Succulents, Cacti, Ivies, Philodendrons, Spider Plants, Snake Plants, Air Ferns, and Asparagus Ferns.

Adaptation:

Grow plants in a greenhouse, if available.

RESOURCES/MATERIALS

Items as specified in activities
Local nursery



T.E.K.S. 119.3 (C.5)

The student describes basic plant structures and physiological processes.

Area: Plant Life

OBJECTIVE	TEACHING ACTIVITIES
2. Student will transplant houseplants.	<ol style="list-style-type: none">1. Explain that transplanting is the process used in moving a plant from a small pot to a larger pot. This move should be made when roots begin to fill the pot or begin to grow out of the bottom hole in the pot.2. When transplanting, the plant should usually be moved to the next-sized pot. If the plant is very fast-growing, however, move it to a pot that is two sizes larger.3. Instruct students to spread newspaper on a floor space large enough to accommodate equipment/materials and to work in comfortably.4. Gather all equipment/materials and the plant to be transplanted and put them on the newspaper within reaching distance.5. Take a piece of rock, shell, or broken pot large enough to cover the drain hole in the bottom of the new pot and cover this hole.6. Take the plant in the old pot and gently tap each side of the pot on the edge of the table to loosen the root ball from the pot sides.7. Take the prepared potting soil and put about an inch of soil into the new pot (more soil might be required if the plant is very large).8. Very gently remove the potted plant from the pot, being careful to disturb the root ball as little as possible.9. If there are any roots sticking out, trim them back carefully.10. Place the plant in the new pot.11. Hold the plant with one hand to keep it straight. With the other hand, pour prepared plant soil around and over the root ball.12. Once the root ball is covered with soil, gently tamp the soil down with your thumbs all around the edge of the pot. Add a little more soil if needed. The soil level should be approximately one to two inches below the rim of the pot.
RESOURCES/MATERIALS	<ol style="list-style-type: none">13. Place the pot on a saucer or a small pan full of pebbles for drainage.14. Clean up the area and put all materials in the proper storage area.
Items as specified in activities	



T.E.K.S. 119.3 (C.7)

The student analyzes the cost and maintenance of tools, equipment, and structures used in the horticultural industry.

Area: Plant Life

OBJECTIVE	TEACHING ACTIVITIES
3. Student will acquire basic yard maintenance skills.	Refer to Vocational-Work Skills: Horticulture <ol style="list-style-type: none">1. Define and describe basic tools used in yard maintenance (e.g., ladder, rake, lawn mower, weed eater, etc.).2. Have students identify when to use a particular tool. Let them keep a notebook with pictures of tools, including how to care and store them.3. Instruct students in the use and safety of gardening tools. Allow students to use tools with close supervision until the instructor is convinced students can operate the equipment safely. Gradually reduce supervision until the students are independent. Tools include:<ol style="list-style-type: none">a. Lawn mower – power, manual.b. Edger.c. Weed eater.d. Leaf blower.e. Hedge trimmer – hand, power.4. Discuss lawn maintenance with students. Include subjects such as fertilizer use, water, how often does lawn need maintenance, etc. Assist students in making a calendar to keep up with regular lawn care.5. Demonstrate for students how to care for shrubs, flowers, plants found in flower beds. Include information about watering and fertilizing at regular intervals.6. Have students begin to care for and be responsible for yard maintenance at school.

RESOURCES/MATERIALS

Tools as indicated
Domestic Skills Program
Keeping House “Maintaining the Yard.”
Attainment Company



T.E.K.S. 119.2 (C.2)

The student recognizes the aesthetic and financial benefits of the horticultural industry.

Area: Plant Life

OBJECTIVE	TEACHING ACTIVITIES
4. Student will identify simple landscaping techniques.	<ol style="list-style-type: none">1. Visit a local park/garden. Have students pay particular attention to landscaping.2. Ask a landscaper to visit the class to discuss simple techniques for landscaping, as well as types of plants, grasses, etc. to use.3. Have students collect pictures of landscapes that they like.4. Elicit suggestions and support from students about landscaping around home or school buildings. Guide students as they landscape one of the areas. Visit a nursery, during Community Based Instruction, to purchase plants for a landscaping project.

RESOURCES/MATERIALS

Pictures
Local nursery
Parks and Gardens

