

This guide was written for teachers but anyone could use this as an activity guide to get kids out in nature. I hope you find it useful.

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Acadiana Park Nature Station

Kindergarten

GLE – 11. Identify objects by using the senses.

Journaling activity:

1. Go outdoors. Draw everything that you see (it can be outlines of things to reduce time).
 - a. Possible drawings: school, flag, grass, tree, shrub, vine, flower, clouds, cars, person, bird. This will introduce your students to the idea of journaling by uses your senses.
 - b. Discuss answers.
2. Now draw everything that you hear.
 - a. Possible drawings: car zooming by, car horn, motorcycle, lawnmower, bird singing, leaves dropping to ground, seeds dropping from tree, wind blowing through leaves, voices.
 - b. Discuss answers.
3. Now draw everything that you smell.
 - a. Possible drawings: food from cafeteria, flowers, leaves, cut grass, dirt, car exhaust....
 - b. Discuss answers.
4. Put a natural object into a paper bag, you could use many of the same objects but do have a bit of a variety. Possible objects: sweet gum seed pod, acorn, stick, leaf, feather, insect gall, cicada molt, snake molt, shell, honeycomb, paper wasp nest, pine needles, small piece of animal skeleton.
 - a. Give each student a bag and have them draw the object without looking at.
 - b. Alternative: pair the students and have them sit back to back. Give one student a bag and have them describe the object to the other student (you could have them look at it or just feel it in the bag). The artist must draw what the describer describes to them. Once the drawing is completed, switch roles of artist and describer. Show drawings and object at end of exercise.

GLE – 12. Construct patterns by using color, size, and shape of objects.

1. Teacher should gather seeds and leaves.
 - a. Give leaves to students for categorization by color.
 - b. They can then categorize by size and shape.
 - c. Seeds can also be used but with caution.
2. Give students one leaf.
 - a. First make sure you do not have poison ivy, oak or sumac in gathering area.
 - b. Next tell students they may not collect living leaves, only fallen leaves not attached to living plants.
 - c. Have students find and gather similar leaves by color, size and/or shape.

GLE – 24. Compare the human body with plants and animals.

1. Find a tree.
2. Differences:
 - a. Plant vs. animal
 - b. Bark vs. skin
 - c. Leaves vs. hair
 - d. Producer vs. consumer
 - e. Roots vs. feet
 - f. Branches vs. arms
 - g. Non-movable vs. movable
3. Similarities:
 - a. Living cells
 - b. Breathing
 - c. Part of nature
 - d. Changes in height
4. Human wounds vs. tree wounds
 - a. Show students a scar on a person
 - b. Show students a scar on a tree
 - c. How are they similar?
 - i. Human bleeds when cut, tree releases sap when cut
 - ii. Blood hardens to form a scab, sap hardens to protect intrusion of foreign bacteria and to allow cells to grow in place of the cut
 - iii. Once cells replace the cut on both humans and trees, a scar is in place
 - d. Just as trees are part of nature, so are humans. We cannot look at a cut and tell our bodies to heal, just as the tree cannot tell its body to heal, it happens naturally within nature.

GLE - 25. Identify easily observable variations within types of plants and animals.

Tree variations:

1. During winter: easy things to see are tree trunks, branches and general shape of tree, or still has a lot of leaves like Red Cedar or Live Oak.
 - a. Trunks: crooked, straight.
 - b. Branches: straight out from trunk, curvy, reaching out and down to ground.
 - c. Shape of tree: oval, round, v-shaped, columnar, pyramidal, weeping, irregular.
2. During summer: things to look for are general shape of tree, bark, shape of leaf
 - a. Shape of tree: oval, round, v-shaped, columnar, pyramidal, weeping, irregular.
 - b. Bark: smooth, rough, bumpy, peeling, scaly, furrowed, flaky, ridged, warty, grooved, papery.
 - c. Leaf: oval shaped, needle-like, palm shaped, spatula shaped, smooth, toothed.
 - i. For leaf shapes of local trees use the Leaf Key to Common Trees in Louisiana by the LSU Ag Center – available for free download at <http://www.lsuagcenter.com/NR/rdonlyres/BA8FFA18-B7CD-4D98-88FF-AF234D5F9ACD/18437/pub1669LeafKey.pdf>

1st Grade

GLE – 28. Describe the characteristics of living (biotic) and non-living (abiotic) things.

In addition to Comprehensive Curriculum Activity 1 – Biology Detectives:

1. Create a scavenger hunt for students to complete outdoors in the schoolyard. The scavenger hunt could be a list of items, both living and non-living, that the students must find and mark “L” for living or “N” for non-living on the worksheet next to each item.
2. Let the students explore the schoolyard with their scavenger hunt to find the things listed.

3. Gather everyone together and discuss which things on the list are living and which are non-living. Teacher could create a chart on a larger paper or board to list all the living things together and all the non-living things together.
4. Living things for scavenger hunt:
 - a. Birds, squirrel, beetle, butterfly, flower, tree, grass, spider, worm, lizard...
5. Non-living things for scavenger hunt:
 - a. School building, car, rock, cloud, sun, water in a pond/ditch, swing set...
6. Students could also draw 5 living things and 5 non-living things in a journal and describe why they are living or non-living.

GLE – 34. Record evidence of plants and animals in the schoolyard or other environments.

1. While exploring the schoolyard with students make a list or let the students draw evidence of animals they find in journals.
 - a. Bird droppings and feathers near feeders or along sidewalk next to roof where sparrows or rock pigeons reside or under trees where birds roost or nest
 - b. Squirrel drays
 - c. Caterpillar cocoon or chrysalis
 - d. Slug trails on sidewalk especially near outdoor trash bins where food is thrown or compost
 - e. Ant trails
 - f. Cicada shells on the ground or on trees
2. Dog food or cat food could be left out overnight in a designated area to attract wildlife.
 - a. Talk about why they were attracted – should we leave food out to attract wildlife?
 - b. Surround the feeder with wet sand or soil so that animal footprints can be seen if any wildlife does visit.
 - c. Make print casting with plaster of Paris if there are any good, visible prints. Pour the plaster mix onto the print and cover the entire area with an upside down can or jar to protect it from trampling. Go back and remove jar when plaster is dry and scoop up the plaster casting carefully. Let dry completely inside before brushing off the mud or sand.

2nd Grade

GLE – 29. Compare differences and similarities among a variety of seed plants.

1. Use grasses, trees, vines, herbaceous plants, shrubs around the school to make comparisons and create a chart.
2. Compare height and width
3. Compare stem thickness
4. Compare seeds or fruit
5. Compare leaf color and shape
6. Compare woody stems to green stems

GLE – 45. Locate and identify plants and animals within an ecosystem.

1. Go out into the school yard with students and look for living things.
2. Possible findings: ants, birds, beetles, bee, butterfly, squirrel, lizard, pill bug, worm, spider, mosquito, grasses, trees, vine, herbaceous plants, shrub, flowers.
3. Teacher could make a scavenger hunt of things to look for that the students could check off as they go or the students could draw the items as they find them.
4. Group students, they find things to create a scavenger hunt for other students with descriptions of “what am I?” statements.

3rd Grade

GLE – 38. Classify groups of organisms based on common characteristics.

1. Give students a picture and name of one of the following animals.
 - a. Crawling: beetle, ant, pill bug, caterpillar, box turtle, snake, roach, slug, snail, armadillo, mouse, rat, worm, lizard, squirrel, raccoon, opossum
 - b. Hopping: rabbit, toad, frog, flea, cricket, grasshopper
 - c. Swimming: fish, river otter, beaver, turtles, alligator, crawfish, shrimp, crab, nutria
 - d. Flying : bird, bat, moth, butterfly, mosquito, bee, wasp
2. Have students act out locomotion of the animal they were given. Look for other students doing same locomotion and migrate towards them until we have grouped all students into a category with similar locomotion.
3. Now have the students share which animal they are and what sort locomotion they used and have them decide if they are in the correct group.
4. Teacher should create another list of criteria to group animals, now that they know what they are. Mammal, bird, fish, reptile, amphibian, insect, etc.

GLE – 58. Describe how humans have had negative and positive effects on organisms and their environments.

1. Walk outside, draw or list permanent man-made structures in schoolyard.
 - a. What was here before the structures?
 - b. What effect has it had on plants and animals that were here before?
 - c. Brainstorm what the habitat looked like before.
2. Draw a picture of what the schoolyard looked like before the structures.
3. What lives in the schoolyard now?
 - a. Do you think these things lived here before?
 - b. Why are they able to live here now?
 - i. Are we providing them with resources that would be unnatural to the environment? Food in trash cans, does it attract wildlife? If you don't have predators or pollinators etc, what would the effects be? Do you have bird feeders instead natural food sources like plants or insects?

4th Grade

GLE – 50. Explain how some organisms in a given habitat compete for the same resources.

1. Search the school yard habitat for competition among plants.
 - a. Tree vs. vine.
 - b. Sapling vs. tree.
 - c. Shrub vs. tree.
 - d. Dandelion or other flower vs. grass.
2. Have students come up with a list of resources that plants could be competing for.
3. Discuss the ways the plants would be competing.
 - a. A vine can climb a tree to reach for the sunlight it needs.
 - b. Can a sapling grow beneath the shade of a tree?
 - c. Is the shrub shade tolerant?
 - d. Grass roots are close together and matted making it hard for other plants to grow.

GLE-51. Describe how organisms can modify their environment to meet their needs.

1. Search the school grounds for habitat modifications made by wildlife.

- a. Holes in trees, ant hills, bird nests, squirrel drays, crawfish chimneys, dirt dauber nest...
- 2. Discuss the purpose of the modification with the class.
 - a. Nests, shelter, finding food...

GLE – 72. Predict and describe consequences of the removal of one component in a balanced ecosystem.

- 1. Make a chart for the students to fill out while exploring the school yard for producers, consumers (carnivores, herbivores, omnivores and decomposers).

Producer	Carnivore	Herbivore	Omnivore	Decomposer

- 2. Students should list as many things in each category as they can find in or around the school yard.
- 3. Teacher should find a spider web in the school yard (early spring through late fall) or draw a simple spider web to use with the producers and consumers the class found to illustrate the food web.
 - a. Allow the students to predict what would happen with the removal of different pieces of the web.
 - b. Will the web lose strength as the pieces are removed?
 - c. What would a spider do to their web if prey broke strands of the web? Why?

5th Grade

GLE – 22. Develop and use a simple dichotomous key to classify common plants and animals.

- 1. Use the Leaf Key to Common Trees in Louisiana by the LSU Ag Center – available for free download at <http://www.lsuagcenter.com/NR/rdonlyres/BA8FFA18-B7CD-4D98-88FF-AF234D5F9ACD/18437/pub1669LeafKey.pdf>
- 2. Page 4-5 of the Leaf Key show a simple dichotomous key and drawings of leaf shapes that can be used to prepare a key for the trees at school.

3. Using the dichotomous key the teacher/class has made, have the students go out into the school yard to identify the trees using the key.
4. A dichotomous key can be made using other characteristics of a tree such as shape or bark or using other objects such as flowers.

Leaf Key	Drawing Nos. (Pictures)
I. Leaves broad; definitely not needle-like or scale-like, mostly deciduous	
A. Leaves alternate on the twigs	
1. Leaves compound	1-26
2. Leaves simple	
a. Leaf edge smooth	27-51
b. Leaf edge toothed	52-83
c. Leaves lobed.....	84-104
B. Leaves opposite on the twigs	
1. Leaves compound	105-110
2. Leaves simple	
a. Leaf edge smooth	111-118
b. Leaf edge toothed	119
c. Leaves lobed.....	120-123
II. Leaves needle-like or scale-like; mostly evergreen	
A. Leaves needle-like	124-130
B. Leaves scale-like	131-132

GLE – 24. Describe the roles of producers, consumers, and decomposers in a food chain.

1. Find a fallen branch, dead tree or stump that is decomposing in or near the school yard that they students can observe.
2. Discuss the nutrient transfer cycle with the class while looking at the branch, stump etc.
 - a. Green plants are producers. Producers are eaten by consumers. When a plant or animal dies they are eaten by decomposers and their nutrients are returned to the soil where they can be used again by producers.
 - b. All living things have nutrients in their bodies. When they die their nutrients are trapped and must be released back to the soil with the help of the decomposers. Once the nutrients are in the soil they can be used by new producers which will be eaten by more consumers and so the cycle continues.
3. Show the students where the dead tree is decomposing and actually making new soil.
4. Point out new plants growing out of or near the dead tree to show how the nutrients are being used.

5. If possible let the students touch or examine with hand lenses (or other magnifying device) some of the new soil. It really feels like soil and there are living things in it that we cannot see with the naked eye.
6. ANOTHER OPTION: use and adapt the activity from the 4th grade section GLE-72.

GLE – 33. Identify the processes that prevent or cause erosion.

1. Go outside with the students and look for things that are causing erosion.
 - a. Rain from school roof hitting the ground making a trench.
 - b. Kids cutting across school yard making paths.
 - c. Herbicides used in ditches. This kills the plants and roots that would be holding the soil in place.
 - d. Trees with a lot of exposed roots. This could be caused by kids walking and playing around the tree.
2. Catalog all forms of erosion found and other possible erosion areas in schoolyard by making a class list or by having the students write/draw their observations in a journal as you walk.
3. After finding examples of erosion at school, discuss it with the class.
 - a. How is erosion caused?
 - b. How is erosion prevented?
 - c. How could erosion be prevented where it is caused? What could be put into place to stop erosion where it is already happening?
 - d. This could lead to a project to stop herbicide use or installing erosion barriers of some sort.

GLE – 50. Describe the consequences of several types of human activities on local ecosystems.

In addition to Comprehensive Curriculum Activity 11 – Non-native Invasion:

1. Look for non-native species in and around the school yard. Use the websites below for help with identifying plants.
 - a. <http://is.cbr.tulane.edu/index.html> Louisiana Invasive Species Website.
 - b. <http://www.invasivespeciesinfo.gov/unitedstates/la.shtml#thr> National Invasive Species Information Center.
2. Have students catalog what species were found and their possible effects on native species.

In addition to Comprehensive Curriculum Activity 12 - Pollution:

3. Take the students on a Pollution Hunt in the school yard.

- a. Look for litter on the playground or in ditches, car exhaust, smoke from a power plant or factory, oil sheen on the pavement, use of herbicides or pesticides, oil spillage near maintenance shed, leaking paint cans, spillage near trash bin, etc.
- b. Have the students make a chart in their journal to document the types of pollution you may find on your walk.
- c. In small groups have student brainstorm on ways that people could make less pollution and how everyone can do their part to keep the earth healthy.

AIR POLLUTION	WATER POLLUTION	SOIL POLLUTION

6th Grade

GLE – 46. Identify ways people can reuse, recycle, and reduce the use of resources to improve and protect the quality of life.

1. Students will conduct a school-wide survey of things that could be done easily to reduce, reuse and recycle.
2. Go on a walking tour of different areas around campus such as the schoolyard, the cafeteria, the classroom, and the building in general and have the students make lists of ways to reduce, reuse and recycle.
 - a. Schoolyard:
 - i. Compost grass clippings and raked leaves rather than throwing in the trash.
 - ii. Can herbicide use and pesticide use be changed to non-toxic alternatives or stopped?
 - iii. A water catchment system such as a rain barrel could be used for watering gardens instead of using city water.
 - iv. Instead of mowing all areas of school grounds put in native plant gardens or vegetable gardens so not as much area needs mowing. This can also lead to other lessons.
 1. Native plant gardens: butterfly life cycle, hummingbird nectar.
 2. Vegetable gardens: food source for students and families, source of income for school organizations.
 - b. Cafeteria:

- i. Compost food scrapes for use in flower/vegetable gardens.
 - ii. Reuse plastic food containers and other containers for art projects (paint holding, etc.)
 - iii. Recycle milk containers by pouring excess milk in sink then rinsing.
 - iv. Use large metal food cans for art projects or recycle them.
- c. Classroom:
 - i. Reuse paper that has only been used on one side as scrape paper.
 - ii. Recycle paper.
 - iii. Use cardboard boxes from cafeteria or office for storage, art projects, etc.
 - iv. Recycle cardboard boxes.
- d. Building:
 - i. Use hibernation or sleep mode for computers instead of stand-by because they use much less electricity.
 - ii. Use power strips for all electronics such as TV, DVD player, etc. and turn off power strip when not in use to stop the unnecessary use of phantom electricity.
 - iii. Install shades on windows to keep the building cooler in hot months. Shades can also be opened during colder months to allow the sun into the rooms for warmth.
 - iv. Adjust the thermostat so the air conditioner doesn't have to run so much in hot months and the heater in colder months.

7th Grade

GLE – 39. Analyze the consequences of human activities on ecosystems.

In addition to Comprehensive Curriculum Activity 4 - Natural and Man-Made Changes in an Ecosystem:

1. Go on a walk around the schoolyard. Students should catalog invasive species they see, such as Japanese climbing fern, Chinese tallow, Chinese privet, Japanese honeysuckle, ardesia, nandina, fire ant, Eurasian collared dove, cattle egret, congo grass etc.
2. Use the following websites for help with identifying non-native and invasive species:
 - a. <http://is.cbr.tulane.edu/index.html> Louisiana Invasive Species Website.
 - b. <http://www.invasivespeciesinfo.gov/unitedstates/la.shtml#thr> National Invasive Species Information Center.

3. Have students do further research on one of the species found around the school to learn their natural history, how they arrived here, their affect on native species and eradication techniques.

8th Grade

GLE – 50. Illustrate possible point and non-point source contributions to pollution and natural or human-induced pathways of a pollutant in an ecosystem.

In addition to Comprehensive Curriculum Activity 3 – Campus Pollution Patrol:

1. Other things to look for and think about while taking the walk as described in the activity:
 - a. Are herbicides used in ditches?
 - b. Pesticides used on ant piles, etc.?
 - c. Parking lots – oil leakage, anti-freeze leakage, tire residue?
 - d. Shed with weed eater, lawn mower, gas spills, oil spills, etc.?
2. Discuss each pollutant discovered on the walk and decide whether it is point or non-point source.
3. If the pollutants are non-point source, how did these pollutants get here?
4. Students should come up with possible solutions for each of the pollutants found.

In addition to Comprehensive Curriculum Activity 2 – Where Does Water Run?:

1. Fill plastic jar with topsoil located in ditches, next to parking lots, in schoolyard....
2. Pour water into jar and let settle. Is there any sheen on surface of water? Can you pinpoint the source?

High School

GLE – 5 Examine and discuss the major stages of succession, describing the generalized sequential order of the types of plant species.

1. Create a succession wheel or garden that can be used for many years to show students how succession happens naturally.
2. Use rope or timbers to section off equal portions of the garden.
3. Number the sections with stakes and let it grow wild and undisturbed.
4. After 1 year, mow/cut all the sections of the garden except for #1.

5. After the second year, mow/cut all the sections of the garden except #1 and #2.
6. After the third year, mow/cut all the sections of the garden except #1, #2, and #3.
7. Continue until all sections of the garden are complete.
8. Each year you will be able to see the difference in what plants are growing in each section.
9. When all the sections have been mowed and you are back to #1, start mowing one section a year in sequential order.