Lesson Plan Grades 3 and 4 for Trip to LCCC Arboretum

Objectives

- Students will identify and describe plant parts and their functions (3.3.3A1)
- Students will categorize living things by external characteristics (3.1.1A5)
- Students will describe common functions living things share to help them function in their environment (3.1.4 A5)
- Students will describe the interactions between living and nonliving components of an ecosystem (e.g., plants [water, sunlight]; animals [air, shelter]) (3.B.1.2)

Essential Questions

- What are parts of leaves and what is their function on a tree?
- How are the seeds of trees dispersed?
- How do trees grow?
- What are similarities and different between deciduous and coniferous trees?

Vocabulary

- Parts of leaves: Axile, petriole, midrib, vein, venules, margin, leaf apix . For definitions, see *https://smartclass4kids.com/parts-of-a-leaf*
- Simple leaves: single leaf blade vs compound leaves: small leaflets along the axis or midrib https://corediferences.com/difference-between-simple-and-compound-leaves/#:~:text=Simple%20leaves%20have%20a%20single%20leaf%20blade%20while,of%20lamina%20whereas%20simple%20leaves%20do%20not%20have.
- Leaf margins: the edge of the leaf- entire leaf, toothed leaf, lobed leaf, parted leaf https://www.treehugger.com/id-trees-using-leaf-shape-venation-1343511
- Chloroplasts: cells that contain chlorophyll and conduct photosynthesis
- https://www.factsjustforkids.com/plant-facts/chloroplast-facts-for-kids/
- Photosynthesis: trees and green plants make food from sunlight, carbon dioxide from the air, and water from the soil which produces energy for the tree to grow and oxygen for the earth. https://www.factsjustforkids.com/plant-facts/photosynthesis-facts-for-kids/
- Deciduous vs. coniferous trees https://directree.org/deciduous-coniferous/

Materials- Activity Sheets (see the LCCC Arboretum website)

- Activity: Investigating and Comparing Trees
- Activity: Parts of a Leaf
- Activity: Seed Dispersal Strategies
- Activity: Investigating Nature with Tools
- Activity: Advanced Tree Study
- Activity: Venn Diagram of Deciduous and Coniferous Trees

Materials- Tools

- Magnifying glasses; clipboards; colored pencils; paper bags for collecting found nature (from the ground); binoculars; cameras; paper and string and crayons for bark rubbing; baskets or boxes for classifying found materials; tool kits for investigation of found nature: eye droppers and water, plastic knives, tweezers and tongs, children's scissors, paper fans to experiment with wind and movement

Activity- Steps and Procedures

1. Watch some of the videos about trees on the LCCC Arboretum webpage
2. Select some of the Activity Sheets to use on your visit to the LCCC Arboretum
3. Allow the children to explore the environment with their tools and activity sheets
4. Use cameras to open qr Codes for the trees
5. Meet at the LCCC Arboretum outdoor classroom to complete the activity sheets and explore any found materials that were collected (nature materials are on the ground)
6. Follow-up the visit with other lessons related to the study of trees

Related Materials & Resources

- Resources for Studying Trees for Elementary School Before or After a Visit to the LCCC Arboretum (attached)

Formative Assessment: See Keys for Activity Sheets

Resources for Studying Trees for Elementary School Before or After a Visit to the LCCC Arboretum

https://ecosystems.psu.edu/outreach/youth/sftrc/lesson-plans/forestry/k-5/terminology

https://www.arborday.org/trees/treeguide/anatomy.cfm

https://www.arborday.org/kids/

https://arboretum.harvard.edu/wp-content/uploads/2020/07/Caring-for-the-Arboretum.pdf

https://ecosystems.psu.edu/outreach/youth/sftrc/lesson-plans/forestry/k-5

https://discovertheforest.org/activities

https://www.plt.org/stem-strategies/tree-lifecycle/

https://ecosystems.psu.edu/outreach/youth/sftrc/lesson-plans/forestry/k-5/all-about-trees

https://arboretum.harvard.edu/wp-content/uploads/2020/07/whycutatree-web-book.pdf

https://arboretum.harvard.edu/wp-content/uploads/2020/07/Tree-Bark.pdf

https://www.plt.org/stuff/contentmgr/files/1/7d107c9eeff935991a82355fb8f22640/files/plt_lorax_activities.pdf

https://brainmass.com/education/extracurricular-activities/elementary-interdisciplinary-tree-unit-582023

https://www.morrisarboretum.org/pdf/your-guide-to-tree-adventure.pdf?pdf=Tree-Adventure-Tour

https://www.prodigygame.com/main-en/blog/earth-day-activities-for-kids/?msclkid=d548c049c6f411eca09ab26622effc51

https://www.brighthubeducation.com/lesson-plans-grades-3-5/52795-deciduous-and-coniferous-trees/

https://www.pinterest.co.uk/pin/212935888619353073/

https://www.naturalinquirer.org/Lesson-Plans-(Middle,-UpperElem-School)-v-218.html

https://www.flickr.com/photos/azshoppist/6691443733/

https://arboretum.harvard.edu/wp-content/uploads/2020/07/Color-In-Nature-Hunt.pdf

https://ecosystems.psu.edu/outreach/youth/sftrc/lesson-plans/forestry/k-5/giving-tree

https://www.neefusa.org/file/954/download?token=RG8fEsSz

https://www.pinterest.com/pin/251568329175970178/

https://www.littlefloweryoga.com/blog/movement-activity-seed-to-forest-of-trees/

https://www.nature.org/en-us/about-us/who-we-are/how-we-work/youth-engagement/nature-lab/elementary-lesson-plans/