Classroom Teacher Preparation

Life Science 23: Tree Identification

Please use the following to prepare for the next SfS lesson.

Description:

Students will use a dichotomous key to identify trees by their leaves. Students will learn the vocabulary necessary to describe the leaves in order to identify the trees from which they came. Students will also compare conifers and broadleaf trees, discuss the function of the leaf, and talk about the advantages of each type of leaf.

Lesson Objectives – SWBAT ("Students Will Be Able To…"):

3rd-5th

- Understand that trees can be identified by their leaf shape and configuration
- Know the function of the leaf
- Use a dichotomous key to identify sample leaves of different trees

Disciplinary Core Idea (DCI)

LS1 From Molecules to Organisms: Structures and Processes – LS1.A Structure and Function

- (3rd-5th) Organisms have both internal and external macroscopic structures that allow for growth, survival, behavior, and reproduction.

Science & Engineering Practice (SEP)

Analyzing and Interpreting Data

Preparation:

This lesson is an introduction, but it would be helpful for students should know the difference between an angiosperm (flowering plant) and a gymnosperm (non-flowering plant that produces seeds).

Room Set Up for Activities:

Students will work in pairs at their desks. The activity is entirely paper-based.

Safety:

There are no safety precautions needed.

Related Modules:

This lesson may be taught as part of a sequence or group of related modules on **Plants**. Modules include:

Life Science 22: Photosynthesis – The Game. Students work in pairs to model photosynthesis through an interactive game. From their game evidence, students then develop an argument that plants need sunlight, carbon dioxide, and water to make food.

Life Science 25: Plant Structure and Function. Students dissect common foods and/or flowers to learn about the main structure and functions of a plant.

For other module sequences and groups, look here: www.sciencefromscientists.org/sequences

Standards Covered:

Please click the following link to our website to review the standards covered by this lesson, listed by state: http://www.sciencefromscientists.org/standards/

Lessons are matched to both national NGSS and local state standards.

After Our Visit:

Extend this lesson by becoming tree detectives – students can use leaf patterns to identify trees near their home.

Access this Extension activity by visiting the Classroom Post found on our website at sciencefromscientists.org/cohorts. Use the name of your school/cohort and password to log in.

To help Evaluate, check out our Open Response questions online at sciencefromscientists.org/open-response-questions. They are freely available for all of our lessons for current teachers. Use the password supplied by your instructor to log in.

Additional Resources:

- Arbor Day Foundation online dichotomous key and pocket guide: https://www.arborday.org/trees/whattree/whatTree.cfm?ItemID=E6A
- USDA Plants database: http://plants.usda.gov/java/
- Male and female pine cones https://www.youtube.com/watch?v=rEvD0N5xn1U
- Forest Academy tree identification guide: https://www.theforestacademy.com/tree-knowledge/broadleaf-trees/#.WCorPvkrJEY
- Encyclopedia Britannia entry on Ginkgo: https://www.britannica.com/plant/ginkgophyte
- Gingko Biloba, living fossil, interview with Peter Crane: http://e360.yale.edu/feature/peter_crane_history_of_ginkgo_earths_oldest_tree/2646/
- Tree classification: https://www.arborday.org/trees/treeGuide/classification.cfm
- This is an excellent field guide with lots of details about what to look for in each tree part: https://www.amazon.com/Native-Naturalized-England-Adjacent-Canada/dp/1584655453
- A nice essay comparing advantages and disadvantages of conifers and broadleaf trees: https://www.wnps.org/blog/conifers-deciduous-trees/
- WPSU videos: http://mass.pbslearningmedia.org/resource/wpsu09.sci.life.oate.wpsutreeid/tree-identification/