

Botany
Youth Initiative High School
11th Grade
September 6~23, 2011
Teacher: Vicki Lynn Ramsay

Botany Course Description

With the exception of the mysterious organisms who utilize the earth's heat energy emanating from deep sea trenches, all organisms on earth get their energy from the sun. Plants are exceptionally amazing in that they not only utilize this energy for their own growth, repair, and reproduction, but contribute a percentage of this sun energy to a multitude of other organisms so that they, too, may live, grow, and reproduce.

The Botany main lesson block will begin with a discussion of theories involving how plants came to be here and changed the very nature of our earth and atmosphere. During the first week of this class we will explore such questions as, how did life first develop the ability to harness the sun's energy? How did this forever change the earth's atmosphere? How did it change the topography of the earth? We will follow the evolution of plants from simple to complex organisms, studying plants in their environments and utilizing the microscope to view their cellular structure. The second week will cover the mysteries of photosynthesis and the unique nature of the plant cell. Students will understand the basic structures and functions of a plant cell, including organelles and nuclear components. We will examine seeds, roots, shoots, leaves and flowers, observing the growth patterns in each. Specific attention will be paid to mosses, ferns, gymnosperms and angiosperms. The third week features a hands-on herbal salve making workshop with herbalist, Robin Mari.

Beyond the study of plant anatomy and physiology, we will also explore plant habitats. Some major themes of plant community ecology include the study of populations, communities and biomes. We will focus specifically on the unique biomes of Wisconsin. We will visit some of these biomes in our own Driftless Region at the Kickapoo Valley Reserve, the Blue River Sand Barrens, and Wildcat Mountain State Park. Throughout our discussions, we will keep in mind that all things are interconnected. As we explore the world of plants, we will also be exploring the interconnections between the worlds of plants, animals, and fungi, and the effects that humans have on all of these.

In addition to the readings and daily class work, students will be expected to complete an independent project. The project can either be a three-week plant experiment or a plant collection with identification. Students will be graded on their participation in all class activities, mastery of an open-book exam, a field journal, independent project and main lesson book.