

RESTORATION PROGRAM (seed collecting)

Intermediate Level Science
Core Curriculum Grades 5-8

Overview:

- Standard 1, Key Idea 1
- Standard 4, Key Ideas 1, 5-7
- Standard 6, Key Ideas 5-6
- Standard 7, Key Idea 1



Note: The blue text explains how the standard directly applies to the program.

Standard 1: Analysis, Inquiry, and Design Scientific Inquiry

Key Idea 1: The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process.

Students will investigate the relationship between a fragmented nature preserve and the health of the health of an ecosystem. They will explore why habitat restoration is an essential component to saving the rare habitat of the Albany Pine Bush Preserve.

Standard 4: The Living Environment

Key Idea 1: Living things are both similar to and different from each other and from nonliving things.

During the initial exploration of the unique Pine Bush habitat, students will realize that certain plants and animals that survive here would not survive in other habitats. They will also learn that fire, a nonliving factor in the health of this habitat, is one of the most important forces that maintains and perpetuates this rare environment.

Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.

Maintaining a dynamic equilibrium is a matter of life and death in the harsh pine barrens habitat. This is evidenced by plants equipped with enormous root structures to absorb enough water and avoid desiccation and by animal's ability to survive the hot and dry environment as well.

Key Idea 6: Plants and animals depend on each other and their physical environment.

While discussing the ecology of the environment, students will be introduced to certain animals that cannot survive without their host plants and certain Pine Bush species that need this specific environment to maintain their existence.

Key Idea 7: Human decisions have had a profound impact on the physical and living environment.

Human impacts are at the foundation of our restoration programs. These profound impacts will be addressed in a discussion of what the Pine Bush is in need of restoration efforts.

Standard 6: Interconnectedness: Common Themes Patterns of Change

Key Idea 5: Identifying patterns of change is necessary for making predictions about future behavior and conditions.

While participating in a restoration project, students will be engaged in a discussion about how Preserve staff have determined the factors that make up a healthy pine barrens. Each factor may fluctuate within a range over time, but it will stay within a range and be somewhat predictable over time.

Key Ideas 6: In order to arrive at the best solution that meets criteria within constraints, it is often necessary to make trade-offs.

As Preserve scientists are constrained by the existing fragmentation of the Preserve. Students will discuss how these constraints are balanced with the restoration and management needs of the ecosystem.

Standard 7: Interdisciplinary Problem Solving Connections

Key Idea 1: The knowledge and skills of mathematics, science, and technology are used together to make informed decisions and solve problems, especially those relating to issues of science/technology/society, consumer decision making, design, and inquiry into phenomena.

Restoring the Albany Pine Bush Preserve incorporates a variety of disciplines to use the best combined knowledge available. Students will play a role in the problem solving process as they collect seed to be planted at future restorations. The interpretive walk will highlight how and why and the Preserve is restored and how much of the restoration would not be possible without the use of heavy equipment and volunteers.