

# Educational Foundations of the Mighty Acorns Program

The Mighty Acorns environmental educational program is designed to provide students with multiple, meaningful, sustained interactions with the ecosystems on which all life depends. As a school year unfolds—fall to winter to spring—students help restore a natural area to ecological health. Participation in the restorative healing of an ecosystem provides students with rich and empowering experiences. The Mighty Acorns curriculum builds on those experiences. The program is organized into three levels, and each takes a full year to complete. During the fall, winter, and spring of each year students take a field trip to a natural area where they participate in restoration work, spend time exploring, and participate in pre-visit, on-site and post-visit activities focused on achieving educational outcomes.

## **Basis of the Mighty Acorns Curriculum**

The Mighty Acorn curriculum has been guided by the broad objectives of environmental education as articulated in the Tbilisi Declaration of 1978<sup>1</sup>. Although more than 20 years have passed since these objectives were put forth, they remain the widely accepted standards of environmental education. These objectives have played a significant role in developing the structure of the Mighty Acorns program. The objectives have been defined by Hungerford, Peyton, and Wilke<sup>2</sup> in the following way:

Awareness	Helping students acquire an awareness and sensitivity to the total environment and its problems
Knowledge	Helping students acquire a basic understanding of how the environment functions
Attitude	Helping students acquire a set of values and a feeling of concern for the environment and the motivation and commitment to participate in environmental maintenance and improvement
Skill	Helping students develop the skills needed to identify, investigate, and contribute to the resolution of environmental problems and issues
Participation	Helping students gain experience in using their acquired skills in taking thoughtful, positive action toward the resolution of environmental problems and issues

A linear approach to achieving the five objectives may seem logical, but studies have shown that students who first *participate* in a project and develop related *skills* are more likely to stay engaged in learning over an extended period of time. Thus, the Mighty Acorns program is designed using an iterative approach, providing students with multiple opportunities to participate in stewardship activities throughout the school year. The stewardship activities address the objectives for skill, attitude, and participation, while strengthening student interest in

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<sup>1</sup> (United Nations Educational, Scientific, and Cultural Organizations, “Framework for Environmental Education,” Final Report, Intergovernmental Conferences on Environmental Education, Paris, France: UNESCO ED/MD/49, 1978, pp. 23–29)

<sup>2</sup> (Hungerford, Harold R., Ben Peyton, and Richard Wilke, “Goals for Curriculum Development in Environmental Education,” *Journal of Environmental Education* 11:3, Spring 1980, pp. 42–47)

and commitment to understanding and improving the health of a native natural community. These stewardship experiences are enhanced by pre-visit, on-site, and post-visit activities that are specifically designed to provide students with the necessary awareness and knowledge to understand the purpose and rationale of their stewardship activities.

### **Educational Strategy of the Mighty Acorns Curriculum**

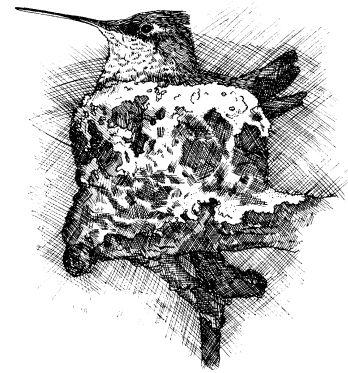
There are multiple educational strategies that could be used to reach the five environmental education objectives. The one that best fits the goals and criteria of the Mighty Acorns program is the theory of experiential education. Three reasons the theory of experiential education fits the Mighty Acorns program so well are:

1. Experiential education is designed around experience (Joplin, 1995).<sup>3</sup>

One of the unique aspects of the Mighty Acorns program is that urban students who may have never been in a natural area repeatedly spend time participating in stewardship activities in a prairie, woodland, or wetland. The mission of the program is in fact to “introduce young people in the Chicago Metropolitan area to nature through stewardship and exploration in away that fosters a personal connection to our natural areas.”

2. Experiential education is based on the assumption that all knowledge must begin with the individual’s relationship to the topic. (Joplin, 1995)

The Mighty Acorns program is designed to allow students multiple opportunities to develop a relationship with natural environments and the process of restoring them. Furthermore “as seasons and years pass, the Mighty Acorn experience influences the lives of the schools taking part. School gardens have sprung up featuring plants long since extirpated from the neighborhoods. Seeds are collected, planted, nurtured, and cherished as beautiful and meaningful components of the schools’ curriculum.” (From Peter Leki, a Mighty Acorns volunteer)



3. The involved paradigm of experiential education explains that everything is connected to everything else. (Joplin, 1995)

This is paralleled in the study of ecology, which is the overarching content focus of the Mighty Acorns program. The study of ecological principles repeatedly reinforces the theories of the interconnectedness and interdependence of all life. Through the Mighty Acorns program, teachers who once taught units focusing only on rainforests can now focus on local ecosystems with actual visits to our globally endangered oak savannas. Endangered species units, once preoccupied with the charismatic orangutans and Siberian tigers, can now be expanded to include our own locally imperiled species, from the Cooper’s Hawk to the prairie white fringed orchid to the river otter.

Gibbons and Hopkins<sup>4</sup> created a framework of experiential learning that delineates ten distinct levels: simulated, spectator, exploratory, analytical, generative, challenge, competence, mastery,

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<sup>3</sup> (Joplin, Laura, *On Defining Experiential Education—3<sup>rd</sup> Edition*, Dubuque, Iowa: Kendall Hunt Publishing, 1995)

<sup>4</sup> (Gibbons, Maurice, and David Hopkins, *On Defining Experiential Education—1<sup>st</sup> Edition*, Dubuque, Iowa: Kendall Hunt Publishing, 1980)

personal growth, and social growth. The three-year experience in the Mighty Acorns program is intended to provide increasing experiential activities and challenges as students progress.

At level I, students are largely involved in simulated, spectator, and exploratory experiences, which include listening to stories, putting on plays, and conducting experiments. This type of activity is exemplified by the level I spring post-visit activity, “Flute’s Journey.” In this activity students read a story based on the life of a wood thrush and the perils he encounters growing up, migrating to Central America, and then migrating back to his home. It deals with the variety of threats the bird faces, including habitat loss and fragmentation, migratory bird food sources, pests such as the brown-headed cowbird, and pesticides. The story also illustrates the theme of competition, which is the focus for the next level.

At level II students participate in activities that are analytical in nature and those that are generative (learning by doing) or challenge-based. In the fall level II pre-visit activity, “Connecting Past and Present,” students build a vision of presettlement Illinois and reinforce their recognition of community types through the reading of historical accounts. They become familiar with the process of change by sorting a series of pictures into a sequence. This is followed by field observations of their present-day community remnant and a comparison to presettlement conditions.

At level III, students engage in competence and mastery experiences as well as experiences of personal and social growth. This is addressed through the spring level III post-visit activity, where students examine the values of biodiversity through time by mapping historical episodes on a “Time Values Chart.” Students then reflect on their own feelings about biodiversity developed through the participation in Mighty Acorns.

### **Core Concepts of the Mighty Acorns Curriculum**

The content of the student activities was developed integrating the core concepts of ecology with the 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> grade State of Illinois Learning Standards.

- Level I curriculum focuses on the concepts of adaptation and interdependence.
- Level II curriculum focuses on the concepts of community and competition.
- Level III curriculum focuses on the concept of diversity.

A personal experience with natural communities coupled with knowledge and skills is a powerful combination. Today’s students will be called upon to make decisions about complex environmental issues in the near future. To make such decisions responsibly, they will need more than just knowledge. They will need a personal, visceral connection to the natural world that can occur only through experience.

# Educational Framework of the Mighty Acorns Curriculum

## Mighty Acorns Vision:

To introduce youth in the Chicago metropolitan area to nature through stewardship and exploration in a way that fosters a personal connection to natural areas.

## Mighty Acorns Objectives:

1. Students will value nature;
2. Students will become stewards of natural areas; and
3. Students will understand the ecological concepts of adaptation, interdependence, community, competition, and diversity.

## Mighty Acorns Educational Strategy:

Ten levels of Experiential Education

1. Simulated—Views movies, TV, slides
2. Spectator—Observes the real thing in its normal setting
3. Exploratory—Plays, experiments, explores, probes the setting
4. Analytical—Studies the setting and experience systematically
5. Generative—Creates, builds, organizes, theorizes, or otherwise produces
6. Challenge—Sets difficult but desirable tasks to accomplish
7. Competence—Strives to become skillful in important activities
8. Mastery—Develops a high standard of quality in performance
9. Personal Growth—Pursues excellence and maturity as a person
10. Social Growth—Becomes exemplary community member

## Mighty Acorns Outcomes

As a result of their completion of Mighty Acorns Level I, students will be able to:

1. List three land management practices used to restore native communities.
2. Know that through stewardship they can play an important role in ecosystem management and restoration at their chosen site.
3. Understand how plants and animals adapt to their ecosystems.
4. Be able to describe how at least three plant or animal species have adapted to their habitat.
5. Understand the significance of interdependent relationships in the functioning of ecosystems.
6. Be able to describe at least three unique, interdependent relationships that exist in the ecosystem(s) they visited.

As a result of their completion of Mighty Acorns Level II, students will be able to:

1. List at least eight species native to the community under study and at least one job/service that each of these species performs in its community.
2. List at least three community types native to Illinois and at least one defining characteristic of each community.
3. List at least two species that pose a threat to their community and be able to describe how and/or why they are threats.
4. List three land management practices used to restore native communities.
5. List two abiotic components which exotic species tend to outcompete native species.
6. Describe five ways in which the natural they are restoring is different from and five ways in which it is the same as it was prior to European settlement.

As a result of their completion of Mighty Acorns Level III, students will be able to:

1. List and describe three land-cover changes in the Chicago area, the reason for the change, and the resulting impact on biological diversity.
2. Describe the positive impact of their stewardship actions and understand the role each season's work activity has played in restoring and/or increasing biological diversity at their work site.
3. Identify and characterize distinguishing features of local plant, insect, bird, and mammal species, and qualitatively assess the habitat in which they were observed (schoolyard versus natural area)
4. Describe at least two habitat-restoration tools/methods that are used to improve native species composition and how that tool/method accomplishes the desired changes.
5. Explain the importance of conserving biological diversity, controlling invasive species, and preserving our biological heritage.
6. Predict the qualitative impacts to Chicago Wilderness biodiversity should current trends affecting decline continue.