

Evaluating Natureness

Measuring the Quality of Nature-Based Classrooms in Pre-K through 3rd Grade



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Praise for *Evaluating Natureness: Measuring the Quality of Nature-Based Classrooms in Pre-K through 3rd Grade*

"Evaluating Natureness is an important guide for early childhood education professionals, from teachers and staff to school and district administrators to policy makers. This book will support ongoing reflection and continual improvement in nature-based early childhood education practices. The ability to implement a common rating scale for our PreK-3rd-grade schools, classrooms, and programs helps us all work together to better support young children's healthy development and connection with the natural world."

—**Tara Williams**, Executive Director, Maine Association for the Education of Young Children (MaineAEYC)



"As nature-based education has expanded, so too has the need for tools that help evaluate programs in action. The NABERS tools are an invaluable resource for evaluation, research, and decision-making in nature-based early childhood education."

—**Christy Merrick**, Director of the Natural Start Alliance



"This book represents the maturation of the nature-based early childhood movement in the United States. Thanks to Patti, Rachel, and Arianna for making these assessment tools available to everyone. Patti created the first version of these assessments almost a decade ago for inclusion in the *Nature Preschools and Forest Kindergartens* book. The original tool has undergone mitosis, has developed into separate preschool and K-3 versions, and has become more specific and user friendly. With this book, early childhood educators now have a clear roadmap for how to make their programs more nature based and their students more rooted in the natural world."

—**David Sobel**, author of *The Sky Above and the Mud Below: Lessons from Nature Preschools and Forest Kindergartens*

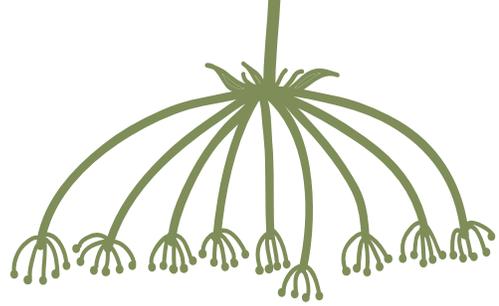
"The positive significance of children being immersed in nature cannot be denied. Scientific research continues to uncover why being in and with nature is an important contributor to children's well-being, including their physical, cognitive, and social-emotional development. Understanding nature's magnitude, figuring out how to offer indoor, outdoor, and beyond spaces, and connecting children with the natural world is an essential responsibility for those who walk beside these young stewards of the Earth. Yet, sometimes we need a bit of help, some knowledgeable guidance, and perhaps a nugget of inspiration. If you're looking for innovative and creative ways to be intentional about nature-based pedagogy, offering natural experiences for young learners, and creating nature-infused places for children to inhabit, look no further. The NAture-Based Education Rating Scales (NABERS) are observation tools that invite educators to review and reflect on children's indoor and outdoor spaces from a nature-based perspective. This book is a practical guide to observing the "natureness" of your program and is an extraordinary resource for fostering important connections and confident relationships with nature."

—**Sandra Duncan**, EdD, coauthor of *Through a Child's Eyes: How Classroom Design Inspires Learning and Wonder*



"The authors, nature-based early learning pioneers and experts in the field, have created a tool that can both inspire educators and evaluate natural and built environments, programming, and leadership for NbECE programs serving children ages 3–8. Their intent to encourage reflexive thought is inherent in the tool, inviting professional conversations about nature pedagogies and the evidenced nuances that lead to high-level practices."

—**Victoria Carr**, EdD, Professor of early childhood education at the University of Cincinnati and Executive Director, Arlitt Center for Education, Research, and Sustainability



Dedication

To early childhood educators everywhere who strive each day to connect young children to the wonders and joys of our natural world. May you find support, encouragement, and inspiration within the pages of this book.

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Acknowledgments

The nature-based early childhood education movement has seen incredible progress in the last decade or so. There has been a rise in the number of immersive nature-based programs and more discussion of nature-based and outdoor learning in mainstream early childhood circles. A professional association for nature-based early educators—Natural Start Alliance—was established in 2013. More and more research is being conducted in nature-based settings, and we've even seen the publication of a recommended research agenda for nature-based learning (Jordan and Chawla, 2019). Our hope is this NABERS tool will contribute to that research agenda and the growing nature-based education movement. Yet, we recognize this growth did not happen magically. There are many scholars and educators who have dedicated their careers to work related to nature-based education, which laid the foundation for the growth we're witnessing today, including the development of this natureness scale.

We want to take a moment to acknowledge the many people who have contributed to the nature-based movement and to this natureness scale, in particular. Researchers, educators, and thought leaders who have provided a foundation for this work include Dr. Ruth Wilson, Dr. Mary Rivkin, Prof. Robin Moore, Dr. Claire Warden, Rusty Keeler, Marcie Oltman, and Ken Finch.

Specific to the development of the two natureness scales, we want to first thank our teammate, Dr. Patti Bailie, for drafting an early version of this tool based on her dissertation research (2012). Thank you to David Sobel for including an early version of the tool in his book *Nature Preschools and Forest Kindergartens: The Handbook for Outdoor Learning* (2016). Additionally, thanks to David, Dr. Rachel Becker-Klein, and Dr. Lori Skibbe for use of the tool in their various research projects examining nature-based preschools and more conventional preschool models. We also want to thank Dr. Lori Skibbe for her support of the development of the K-3 version of this tool in examining child outcomes at kindergarten and first grade in nature-based and more conventional elementary settings.

All of these studies were made possible thanks to the financial support of the George B. Storer Foundation. We are incredibly grateful for all the foundation has done for the nature-based education movement over the past fifteen years.

We also want to extend a particularly heartfelt thank you to the many schools, administrators, teachers, children, and families who were part of the research projects that included the development of this tool at the pre-K and K-3 levels. Further, there were many early childhood programs that piloted early iterations of the tools, provided thoughtful feedback, and/or provided photos for the current book.

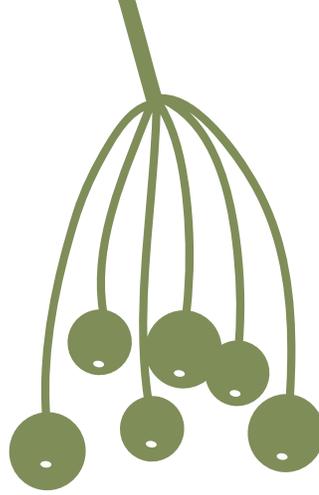
As former nature preschool directors, Patti would particularly like to thank Schlitz Audubon Nature Preschool teachers, staff, and families, and Rachel would like to thank Chippewa Nature Center Preschool for the years of experiences and influence on our nature-based knowledge and philosophies. Thank you to these teams for their dedication to the growth and development of the nature-based early childhood education profession.

These two tools would not exist without the work and support of all of these nature-based practitioners, researchers, and thought leaders. Thank you to all of them!

Finally, the book you're reading would not have been possible without the support of the entire Gryphon House team and our families and friends. This project has been a labor of love, and we hope it provides a meaningful contribution to the field so that, eventually, all children will have high-quality nature-based experiences as part of their formal education.







Introduction

Why Nature-Based Early Childhood Education?

Nature-based early childhood education stems from a deep tradition in both early childhood education and environmental education. The earliest kindergarten, meaning “children’s garden,” began in the early 1800s. Developed by Friedrich Froebel, this approach assigned a small garden plot for each child to cultivate and a larger one for several children to work on together (Morrison, 2001). Later, the nature study movement of the late-nineteenth and early-twentieth centuries, which encompassed John Dewey’s progressive education, provided models for experiential education that many early childhood programs incorporated (Armitage, 2009).

Maria Montessori, who connected nature education with the natural development of the child, insisted that children cultivate gardens (Montessori, 1912). Both Waldorf education and the Reggio Emilia approach have included natural materials as a foundation for scientific understanding and as a basis for inquiry and development of theories (Schwartz, 2009; Edwards, Gandini, and Forman, 1998). Nature has always been a key part of preschool and kindergarten curricula, providing engaging experiences for young children to learn through their senses (Baillie, 2016).

Common threads run through the histories of both early childhood and environmental education. Both have an approach to education that addresses the whole child, includes authentic experiences, integrates subjects in the curriculum, and provides opportunities for sensory-based learning. However, the role of nature in early childhood education is primarily focused on child development, and the role of early childhood in nature study is the development of environmental stewardship.

Why Is It Important for Children?

Because young children learn through their senses, the natural world provides many opportunities for learning, such as listening to bird calls (a precursor to phonetic awareness), searching for animal tracks (patterns and spacing provide a foundation for math), and collecting tadpoles and catching frogs (a life-cycle concept in science). In addition to the foundation for academics that learning outside offers, a growing body of research suggests that nature's role in the developing child is significant and should be fostered. For example, studies have shown a decrease in symptoms of attention-deficit hyperactivity disorder (ADHD; see Faber Taylor and Kuo, 2009), higher development of motor skills (Fjørtoft, 2001), and increased resilience (Ernst, Juckett, and Sobel, 2021) in children who attend nature-based programs. Nature-based play has also been shown to instill a sense of place and stewardship (Chawla, 2015).

What Is NbECE and Nature-Based Pedagogy?

Nature-based early childhood education (NbECE) is a broad term describing the integration of two disciplines—early childhood and environmental education (Bailie, 2010; Larimore, 2011a, b). This pedagogical approach is sometimes also called *nature pedagogy* (Warden, 2015) or *nature-based pedagogy* (Larimore, 2019). Given the integration of early childhood and environmental education, NbECE has dual goals of whole-child development and environmental literacy (Bailie, 2012). Nature-based programs value not only cognitive but also social-emotional and physical development (Bishop-Josef and Zigler, 2011), along with children's connection to the natural world (Larimore, 2019). This approach includes any program model for children ages birth to eight years that does the following:

- ✿ Provides extensive daily outdoor time
- ✿ Operates with nature as the curriculum's organizing concept
- ✿ Follows a curriculum that emerges from children's interest in seasonal events
- ✿ Emphasizes learning *with* nature rather than learning *in* or *about* nature
- ✿ Supports learning across the boundaries of physical spaces indoors, outdoors, and in more wild spaces beyond the outdoor play space (Bailie, 2012; Finch and Bailie, 2015; Larimore, 2016; Sobel, 2014a; Andrachuk et al., 2014; Kenny, 2013; Larimore, 2011a; Moore and Cosco, 2014; Sobel, 2015; Warden, 2012, 2015)

In addition, teachers in nature-based programs are colearners with the children and partners in play as they discover and explore the natural world. The daily outdoor experiences and teacher-child interactions provide the foundation for learning that connects nature-based experiences through physical spaces and activities over time. The nuances of these characteristics of NbECE are the crux of the NAture-Based Education Rating Scales (NABERS; pronounced "neighbors") tools. The NABERS

tools focus specifically on measurable features to determine how rooted a program is in nature-based pedagogy.

Today, under the broad umbrella of NbECE, there are a variety of program models throughout the world, such as nature-based preschools, forest preschools, forest kindergartens, nature kindergartens, and bush kindergartens. Some of these variations are based on cultural context, such as the term *preschool* versus *kindergarten* in different countries for children ages four to five years. Other variations include the emphasis on time outdoors and the use of an indoor facility (Larimore, 2016; Merrick, 2019). Whereas NbECE includes programs serving children from birth to eight years old, the NABERS tools measure a “natureness” focus in pre-K and K-3 settings specifically. Additionally, although the tools were originally developed in the United States with U.S.-based schools in mind, the basic principles are applicable no matter the sociocultural context. The most problematic part of NABERS may be the Staff (pre-K) and Teacher (K-3) Qualifications sections. The intent is that teachers meet the requirements of the governing body to which they report and also have nature-related formal education.

Why Assess Nature-Based Education in an Early Childhood Program?

Nature-based education is a growing educational practice in the United States, with the number of nature-based preschool programs doubling in recent years (Natural Start Alliance and NAAEE, 2020). Although organizations such as North American Association for Environmental Education (NAAEE) and Natural Start Alliance have created guidelines for how programs can include more nature, the NABERS Pre-K and K-3 tools are the first assessments created to determine the quality of the integration of nature into an early childhood education program.

NABERS was developed based on best practices in both early childhood education and environmental education, such as those outlined in the National Association for the Education of Young Children’s (NAEYC’s) *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8* (Copple and Bredekamp, 2009), the NAAEE *Guidelines for Excellence* (n.d.), and the National Association for Interpretation (NAI) principles of interpretation (2019). In addition, *The Nature-Based Preschool Professional Practice Guidebook* (Merrick, 2019), developed by the Natural Start Alliance and NAAEE and released after the NABERS tools were created, greatly influenced our revisions. Although the NABERS Pre-K and K-3 tools incorporate the NAEYC developmentally appropriate practices, these tools focus more on the program characteristics that enhance and integrate nature-based pedagogy into a program.

This book is a guide to NABERS Pre-K and NABERS K-3. The goal of this guide is twofold: to bring clarity to the scoring of items within the NABERS tool and to describe tangible examples to support educators in shifting administrative and teaching practices to be more nature based.



Best Practices in Early Childhood Education and Environmental Education

The NAEYC book *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8* is about meeting children where they are according to what is known about child development, the individual child, and the social and cultural contexts in which a child lives (Copple and Bredekamp, 2009). Best practices in early childhood education are based on research in child development. Central to developmentally appropriate practice (DAP) are the integrated curriculum, attention to the whole child, child-centered and play-based curriculum, and intentional teaching practices.

The National Project for Excellence in Environmental Education initiated several different but interrelated efforts from 1996 to 2010. The NAAEE *Guidelines for Excellence: Early Childhood Environmental Education Programs* (n.d.) focuses on six key characteristics of ECEE: program philosophy, DAP, curriculum framework for environmental learning, play and exploration, places and spaces, and educator preparation. The *Early Childhood Environmental Education Rating Scale* (2011), a formative evaluation tool developed by Dr. Yash Bhagwanji to help programs improve nature education for young children, was based on these guidelines.

Freeman Tilden, the preeminent voice of the field of interpretation, developed a set of guiding principles in the mid-1950s. Tilden's six principles (1957) incorporated the philosophy of nature guiding in the national parks developed by Enos Mills, a ranger at Rocky Mountain National Park. The NAI *Interpretation Standards* (2019) suggest that quality interpretation requires honing skills and knowledge as well as a commitment to professional development. Interpretation should be more inspirational than informational, address the whole person, and be provocative rather than just instructing. Finally, one must have a passion for the work, inspiring conservation and being intentional and thoughtful in developing programs.

Whom Is NABERS For?

The NABERS tools are designed to capture, in a relatively short amount of time, a snapshot of the current NbECE practices and glimpses into potential areas for improvement in a single classroom. As such, NABERS provides a way for practitioners, researchers, and policy makers to collect standardized information on the quality of nature-based classrooms from pre-K through third grade.

Practitioners

Our hope is that NABERS will encourage and support practitioners' ongoing reflection of their nature-based teaching. Through this reflection, we hope teachers and administrators will make continual improvement in their NbECE practices to better support young children's development and connection with the natural world.

NABERS is also intended to capture a relatively broad view of classrooms. This is not to say that tools exploring teaching and administrative practices at a more granular level are unnecessary. We value more focused, nuanced examination of nature-based programs, such as exploring the questions teachers use in teacher-child interactions. The NABERS tools, however, were designed to be an initial step and perhaps to point to areas for further explanation. Our hope is that the explanations and examples in this book will inspire tangible opportunities for growth in nature-based practice.

Researchers

Given that the field of NbECE in its current form is relatively new, we hope researchers will use the NABERS tools when conducting studies that report on the practices or outcomes of nature-based programs. Using NABERS as a way of defining the extent to which nature is used in the class curriculum will help scholars and practitioners make sense of comparable or differing results. For example, if a study is comparing two different nature-based kindergarten classrooms, the NABERS K-3 tool can be used to highlight similarities and differences in teaching practices in those two classes. If the study also compares child outcomes within those classrooms, the K-3 tool may provide additional insights as to why those outcomes were observed.

Although NABERS was designed to provide a picture of a nature-based classroom, we caution researchers to complete their own reliability among raters on the research team. This may involve multiple iterations of rating and clarification of items and terms. The tools themselves and the information in this book should be referenced heavily to clarify and establish agreement on interpretations. We also encourage that any significant areas of discrepancies using the tool be reported in study reports and manuscripts for the benefit of readers as well as for future research.

Policy Makers

The NbECE movement is growing rapidly. This is great news for young children, but it can be challenging for policy makers. For example, most states now have a quality rating and improvement system (QRIS) for preschool programs, which often includes an observation tool of some sort. However, the observation tools rarely focus on nature-based practices specifically. This is problematic for programs that define themselves as “nature-based.” The NABERS tools will provide a common framework for determining the quality of these nature-based programs. In other words, it will serve as an accountability measure with clear, common language and standards. We can envision states using this tool, in conjunction with their other QRIS measures, to rate and support nature-based programs.

We also hope this tool will help move the emphasis for accountability away from individual child assessment (outcomes) to the inputs in a child’s learning environment and a focus primarily on the behaviors of the adults who directly and indirectly influence young children’s learning.





Using the NAture-Based Education Rating Scales

Overview of NABERS

The purpose of the NABERS tools is to distinguish high-quality nature-based early childhood (NbeCE) practices. It is not intended to measure general high-quality early-childhood practices that are not related to the nature-based approach. NABERS is intended to encourage ongoing reflection to make continual improvement in NbeCE teaching and administrative practices. Thus, the tools are designed to be completed during a three-hour observation. The NABERS tools assume someone other than the classroom teacher—such as a curriculum coordinator or outside assessor—will be completing the rating scale. We do, however, encourage using the tool as a self-assessment measure to identify strengths and areas of possible improvement.

NABERS for Pre-K

NABERS for Pre-K is organized into five sections. Within each section are multiple categories. Each category has multiple items with descriptors for each item. The items are scored across the row. Each row lists the Level 1 through Level 7 descriptors for a particular item. There are anywhere from one to nine items for each category, and these differences in the number of items are accounted for in the scoring process.

Nature-Based
Preschool

Forest Preschool

Forest Kindergarten

Nature Kindergarten

Bush Kindergarten

No matter what you call it, nature-based early childhood education is a rapidly growing trend!

Although many educational institutions have incorporated nature-based learning, educators can feel at a loss when trying to evaluate quality in these environments. But don't worry—*Evaluating Natureness: Measuring the Quality of Nature-Based Classrooms in Pre-K through 3rd Grade* is here to help.

Designed with early education practitioners, researchers, and policy makers in mind, the NAture-Based Education Rating Scales (NABERS) for Pre-K and K-3 let professionals easily collect standardized information on the quality of their education settings, including:

- Program goals and curriculum practices
- Staffing
- Environment
- Community partnerships
- Family engagement

Whether you want to evaluate an existing nature-based program or discover how to shift your program toward a nature focus, this book is for you!



Patti Ensel Bailie, PhD, is an associate professor of early childhood education at the University of Maine at Farmington and is a leader in the nature preschool movement. She is the founding director of the Schlitz Audubon Nature Preschool in Milwaukee, WI. This is her second book with Gryphon House. She is the coauthor, with Catherine Koons-Hubbard, of *Partnering with Nature in Early Childhood* (2022).



Rachel A. Larimore, PhD, is the founder and owner of Samara Early Learning, LLC, in Midland, MI. She writes and speaks extensively on connecting children to nature through high-quality, nature-based early childhood education. This is her second book with Gryphon House. She is also the author of *Preschool Beyond Walls* (2019).



Arianna E. Pikus, MS, currently researches child academic and socio-emotional outcomes of nature-based early childhood education. She taught environmental education for five years and preschool for two years before deciding to pursue a doctorate.


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