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State Policies and Guidance Relating to Outdoor and Nature-Based Experiences in Preschool

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Attention to young children’s outdoor and nature-based experiences has increased in recent years. Research suggests that young children’s learning and development,^{1,2} and health³ may benefit from outdoor activities and from exposure to nature, in particular. Additionally, experiences with nature provide opportunities for environmental education.⁴ The specific benefits of outdoor activities likely vary by the extent and types of exposure to nature they provide. A common example is children playing outdoors on blacktop or artificial turf and using play equipment like swing sets and monkey bars. Such experiences provide time for gross motor activity, support physical skill development, and expose children to sunlight and fresh air (depending on outdoor air quality). A less common example is forest preschools in which children interact with a natural landscape and spend the entire preschool day outside.

In this brief, we first consider in greater detail the potential benefits of outdoor and nature-based experiences in preschool programs. We then review current state policies to assess the extent to which these might facilitate or present barriers to implementing outdoor and nature-based experiences in state-funded preschool. Finally, we offer recommendations for improvements in state policies to facilitate outdoor and nature-based experiences in state funded preschool.





Benefits of Outdoor and Nature-Based Learning for Young Children

Health benefits are among the most studied potential positive impact of outdoor activities for young children in both the short- and long-run. More time outdoors has been found to be associated with increased physical activity and decreased sedentary behavior for children including preschool-age children.⁵ Although these behavior changes might be expected to improve children's heart health and motor skills, and reduce obesity, the research has been mixed on the benefits of outdoor time for body weight.⁶ Increased outdoor time may not increase physical activity for preschool-age children enough to significantly influence weight, and weight also depends on diet which is not necessarily constant when activity changes.⁷ More time outdoors has been found to be associated with decreased myopia (nearsightedness), perhaps because it reduces screen time in young children.⁸ Myopia, in turn, is predictive of visual impairment and blindness later in life.

More outdoor time also has been found to be associated with better executive functioning.⁹ For example, in one study of 562 Norwegian preschoolers followed over four years, there was a positive relation between time spent outdoors and a test of executive functioning (attention and short-term memory). That study also found an inverse relation between outdoor hours and inattention-hyperactivity symptoms. Outdoor time in preschool may support children's development of attention skills and protect against inattention-hyperactivity symptoms.¹⁰

Outdoor time during preschool can be divided into two categories: time spent in constructed environments (e.g., playgrounds, blacktops, other artificial surfaces) and time in natural environments which range from wilderness to parks and other green spaces to gardens. A comprehensive review of the effects of exposure to nature per se (rather than any outdoor time) on children's health finds the strongest positive effects for residential green space (e.g., green space located near homes or schools such as public parks, community gardens, backyards,

communal gardens of apartment housing).¹¹ This evidence supports the view that spending time in nature improves young children's physical and mental health. Research on the effects of nature exposure on other cognitive and academic outcomes has primarily been with older children and few studies have found evidence of long-term impacts on academic outcomes from young children's exposure to nature.¹²

Another body of research finds that exposure to natural green spaces boosts an individual's immune system.¹³ For example, a study in Finland found children exposed to natural green spaces in their child care programs showed increased T-Cells and other important immune markers in their blood. The child care programs planted lawns and forest undergrowth and allowed the children time to play in these settings. In just 28 days, their immune markers showed an increase in T-cells as compared to other city children who played in standard urban child cares with pavement, tile and gravel.¹⁴

An educational rationale for increased time in natural spaces is that it improves the amount and quality of young children's play. The expectation is that outdoor and natural spaces offer more opportunities for self-directed play that is more complex and offers opportunities for more risk taking.¹⁵ Some evidence suggests that natural environments can promote more imaginative and cooperative play.¹⁶

Nature-based education may also facilitate better environmental education to young children. A systemic review spanning 25 years on early childhood (birth-age 8) environmental education pedagogical practices found positive environmental education outcomes for environmental literacy development in 50 (76%) of the studies, as well as positive outcomes for cognitive development in 25 (38%), social and emotional development in 25 (38%), physical development in 14 (21%), and language and literacy development in six (9%).¹⁷

Why Should States Focus on Outdoor Nature-Based Learning for Young Children?

Widespread and serious children's health problems that have worsened in recent years may be related to decreased outdoor time (and associated increased screen time) and decreased exposure to nature. These worsening problems include increased weight and obesity, diabetes, hyperactivity, stress, asthma, allergies, and other hypersensitivity diseases.¹⁸ Decreased time outdoors and in nature are concerns for all children. A recent national survey found that about half of all children ages 3 to 5 and not yet in kindergarten do not play outdoors every day.¹⁹ However, there is even greater concern for low-income children who are more likely to experience these health problems and have more limited access to safe outdoor spaces for play with fewer nearby residential parks and more limited access to parks and wilderness areas.²⁰ Children in low-income families are prioritized for enrollment in many publicly funded early childhood education programs, making those programs a good setting to target increasing time outside and in nature.

States also have an interest in maximizing the learning, development, and health gains from preschool



programs. Children attending nature-based programs may engage in more developmentally beneficial play and may have better opportunities to develop an appreciation for and understanding of the natural world and biological and environmental sciences. Other traditional preschool programs can also set policies and implement practices to maximize (or increase) children's time outside and in nature, including using this time in purposeful, meaningful ways.

State policies and guidance including child care licensing, child care quality rating and improvement systems, and standards for public preschool education have the potential to increase or limit young children's outdoor and nature-based experiences, including allowing for entirely nature-based programs. State policies may set minimums for outdoor time or impose weather-based restrictions on outdoor time, set requirements for outdoor spaces, include nature-based experiences and environmental education, and set expectations, standards, or requirements for outdoor play. These rules could facilitate outdoor time for young children, but could also unintentionally obstruct access.

While some states have begun to focus on new standards for outdoor time and spaces and regulatory requirements for nature-based early childhood programs, many states have yet to consider how to better align their child care and preschool education policies and guidance with the growing knowledge about the benefits of outdoor time and exposure to nature for young learners. Areas that require attention include: requirements for outdoor play, access to gross motor space and green space, guidance on weather conditions that might restrict outdoor time, standards regarding nature and outdoor education, the ways in which health and safety standards and facilities requirements might differ for outdoor and nature-based activities and programs compared to indoor classroom-based programs, and the kinds of staff professional development that may be needed to promote learning and development through outdoor and nature-based experiences.



Current Standards for State-Funded Preschool Relating to Outdoor and Nature-Based Learning

As part of the 2023 State of Preschool Yearbook survey,²¹ NIEER collected data on state policies related to outdoor and nature-based activities from 61 state-funded preschool programs from 43 states, the District of Columbia and Guam.²² The results are reported in Tables 1 & 2 and Figures 1 & 2 below.

Forty-two percent of state-funded preschool programs have regulations requiring outdoor time—for many states, those regulations are child care regulations. Seventeen percent of state-funded preschool programs offer guidance related to outdoor time and 41% did not have regulations or guidance. As shown in Table 1, of the total state-funded preschool programs that have regulations or guidance on daily outdoor time, 52% required outdoor time but the amount of time spent outdoors was not specified, 11% required 30 minutes or less; 20% required 30-60 minutes; and 17% required outdoor time multiple times during the day.

A little over half of state-funded preschool programs provided no policy or guidance on unacceptable weather conditions during which children cannot play outside (52%), 33% offered guidance, and 15% included unacceptable weather conditions in regulations. As shown in Table 2, of the half of state-funded preschool programs with state policy or guidance on unacceptable weather conditions, 34% offered policy or guidance on air quality, 48% on maximum temperature, 45% on minimum temperature, and 31% on storms/inclement weather. Seventy-six percent of these programs reported “other” policy or guidance, which included information related to extreme weather conditions (earthquakes, typhoons), locally determined decisions, or Department of Health, Facilities Offices or Weather agencies that provide guidance.

Twenty states and the District of Columbia, representing 42% of state-funded preschool programs, conducted or offered support for professional development activities for staff specifically designed to promote effective learning through outdoor experiences (see Figure 1).



Thirty-two percent of state-funded preschool programs did not have policy or guidance requiring gross motor space and 20% required gross motor space but did not specify the location (e.g., indoors or outdoors; see Figure 2). Forty-seven percent of state-funded preschool programs require gross motor space to include outdoor areas and of those programs 37% also require indoor gross motor space. One state, South Carolina, had different requirements based on the location of the program. Only 18% of state-funded preschool programs require green space.

The District of Columbia and eight states (Hawaii, Maine, Michigan, Minnesota, Nebraska, New York, Washington and Wisconsin) include outdoor, nature-based preschools in their state-funded preschool program. However, only three states currently have regulations or guidance specific to outdoor, nature-based preschools: Minnesota, Washington, and Wisconsin.

What Else is Needed?

While research suggests benefits from outdoor play and nature-based preschool programs, close to half of state-funded preschool programs did not have regulation or guidance on outdoor time. Of those that did have regulations or guidance, over half of those did not specify any guidance on the amount of time. Just 17 percent required that children play outside multiple times during the day. Considering that preschool children are typically between 3 and 5 years old and many attend preschool for at least four to six hours per day, states should consider whether 30-60 minutes of outdoor time is sufficient. Other states might benefit from the examples offered by the few states that have policies or guidance requiring that children experience outdoor time multiple times during the day and also consider whether some of those times could include lessons that traditionally occur inside (e.g., conducting science experiments, observing the natural world, planting/gardening, reading books, counting or measuring with natural materials).

States should consider solutions to overcome barriers for maximum and minimum temperatures when children can play outside including wearing additional clothing for colder temperatures and providing shade and accessibility to drinking water during hotter temperatures.

More staff professional development is also needed to promote effective learning through outdoor experiences. These offerings can demonstrate how learning in an outdoor setting can be used to increase children's engagement while benefitting them socially and emotionally, as well as physically. Professional development can help teachers and administrators understand how to meet early learning standards through lessons occurring outdoors.

Regulations or guidance related to areas for gross motor space should be provided in state-funded preschool programs and programs should strive to provide more natural and green space for play and exploration. While this may be more difficult in urban areas, allowing preschool funds to be spent to build natural playscapes in outdoor areas may be a solution. Developing partnerships with public green spaces children can visit during preschool can be another solution.

Promulgating and creating regulations to allow for outdoor, nature-based programs would facilitate increased availability of these programs which provide children with the benefits of learning through and about nature. Licensed programs following regulations should be eligible for preschool funding and participation in the state's child care subsidy program. This would allow more children who might not otherwise be able to afford them to attend nature-based programs. Creating regulations for outdoor, nature-based programs also ensures safety for children as well as sets the professional development standards needed to ensure that teachers are prepared to teach in this type of environment.

Additional funding to support outdoor, nature-based learning in preschool settings could lead to positive early childhood educational experiences and cognitive, physical, and social-emotional benefits for young learners. More research is needed to track the learning, development, and health outcomes in the short- and long-term of children participating in nature-based programs as well as to understand the added benefits of increased, purposeful outdoor time in more traditional early childhood programs.

Overall, state-funded preschool programs should consider regulations and guidance they currently have related to outdoor play and learning and how to strengthen their policies to benefit children.

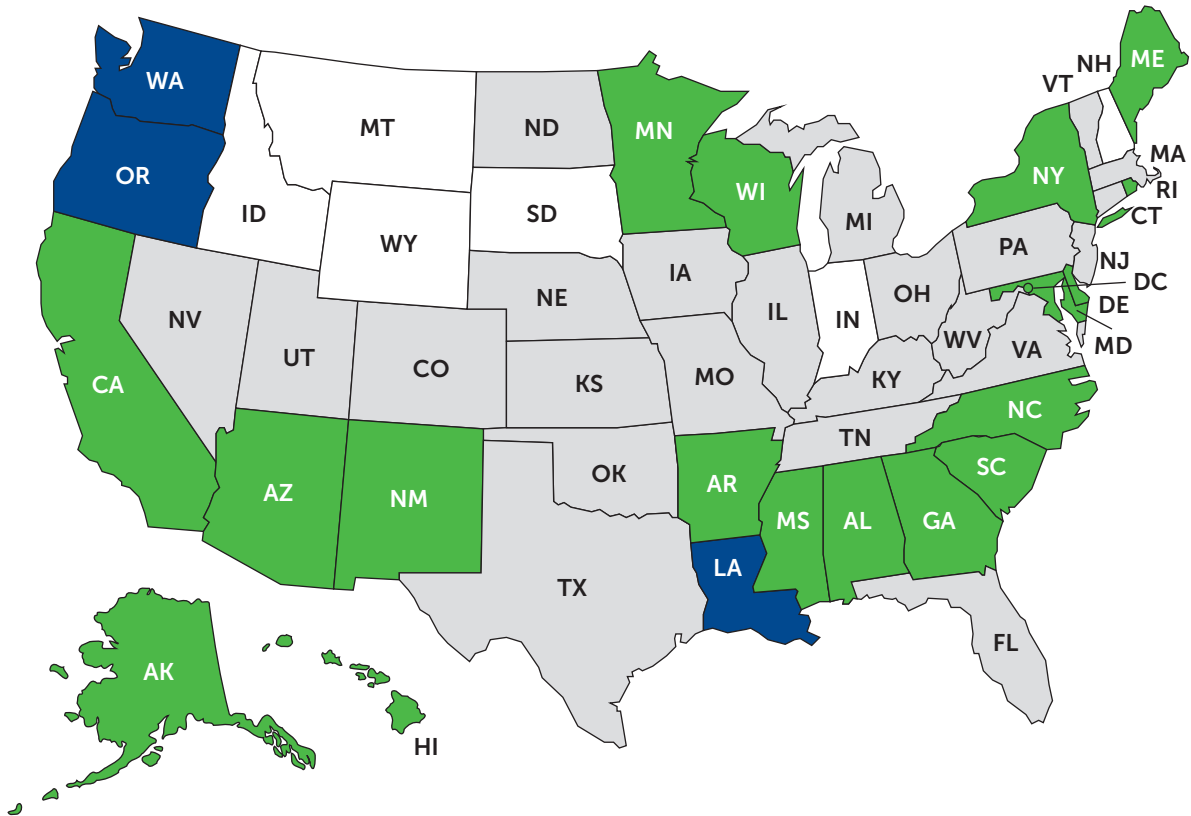
Table 1. Does state policy and/or guidance require outdoor time in state-funded preschool?

REQUIRED BUT AMOUNT OF TIME NOT SPECIFIED	AT LEAST 30 MINUTES	30-60 MINUTES	MULTIPLE TIMES PER DAY
Arizona	California Transitional Kindergarten	Arkansas (60 min.)	Illinois (Every day: 30 min. for every 3 hours)
California State Preschool Program (Every day: Per ECERS (substantial portion of day))	District of Columbia Universal Pre-K in Public Schools (20 min.)	District of Columbia Universal Pre-K in Community Based Programs (45 min.)	Ohio
Connecticut Child Day Care Contracts	New Mexico	Georgia (30-45 min.)	South Carolina (90 min.)
Connecticut School Readiness	Rhode Island	Mississippi (Every day 20 to 60 min. depending on length of day)	Virginia Early Childhood Foundation Mixed Delivery (15 minutes per day/session if center operates up to 3 hours; 30 minutes per day/session if center operates 3-5 hours; 60 minutes per day/session if center operates 5+ hours)
Delaware (Every day)		New Jersey (45 min.)	Washington Early Childhood Education & Assistance Program (Every day: 30 min. for every three hours of operation)
Hawaii's Executive Office on Early Learning Public Prekindergarten Program (Every day)		North Carolina (45 min.)	Guam (Multiple times per day: 30 min.)
Iowa Shared Visions (Every day)		Oregon Pre-Kindergarten (Every day: 60 min.)	
Iowa Statewide Voluntary Preschool Program (Every day)		West Virginia (Every day; 60 min)	
Kansas (Every day)			
Kentucky			
Maine			
Michigan (Every day)			
Minnesota Head Start			
Minnesota Voluntary Prekindergarten & School Readiness Plus			
Nebraska			
New York			
Tennessee (Every day)			
Vermont			

Table 2. State policy and/or guidance on unacceptable weather conditions for when children in state-funded preschool programs cannot play outside

STATE PRESCHOOL PROGRAM	AIR QUALITY	MAXIMUM TEMP.	MINIMUM TEMP.	STORMS/ INCLEMENT WEATHER	OTHER
Arizona Quality First Scholarships	✓	✓	✓	✓	✓
Arkansas Better Chance for School Success		✓			✓
California Transitional Kindergarten	✓				
Delaware Early Care & Education Programs	✓	✓	✓	✓	
District of Columbia Universal Pre-K					✓
Georgia's Pre-K Program	✓	✓	✓	✓	✓
Hawaii's Executive Office on Early Learning Public Prekindergarten Program					✓
Illinois Preschool for All and Preschool Expansion		✓	✓		
Iowa Shared Visions		✓	✓		✓
Iowa Statewide Voluntary Preschool Program		✓	✓		✓
Maryland Prekindergarten Program					✓
Massachusetts Commonwealth Preschool Partnership Initiative					✓
Minnesota Head Start	✓	✓	✓	✓	✓
Minnesota Voluntary Prekindergarten & School Readiness Plus	✓			✓	✓
Mississippi Early Learning Collaborative				✓	✓
Nebraska Early Childhood Education Program		✓	✓		
New York State Administered Prekindergarten Program					✓
North Carolina Pre-Kindergarten Program	✓	✓	✓	✓	✓
North Dakota Best In Class					✓
Oregon Pre-Kindergarten					✓
Oregon Preschool Promise					✓
Pennsylvania Head Start Supplemental Assistance Program					✓
South Carolina Child Early Reading Development & Education Program and EIA/4K		✓	✓		✓
Tennessee Voluntary Pre-K		✓	✓		✓
Vermont Universal Prekindergarten Education (Act 166)	✓	✓	✓		
Virginia Preschool Initiative	✓				
Virginia Early Childhood Foundation Mixed Delivery					✓
Washington Early Childhood Education & Assistance Program	✓	✓	✓	✓	✓
Guam Department of Education Prekindergarten Program				✓	

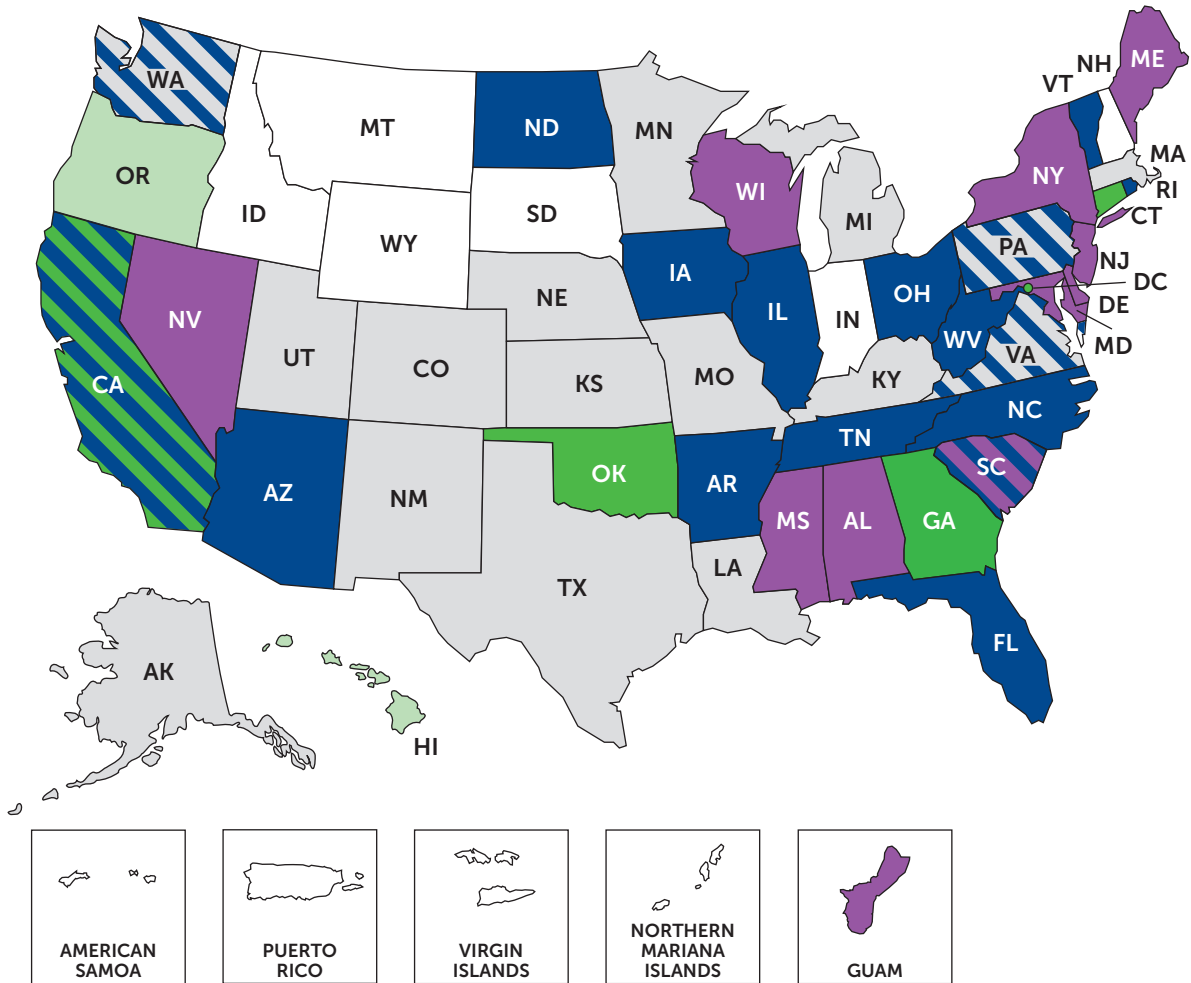
Figure 1. Professional development activities for preschool staff specifically designed to promote effective learning through outdoor experiences



State supports PD activities to promote effective learning through outdoor experiences

- Yes
- Yes, for some pre-K programs
- No
- The state does not have a state-funded preschool program meeting NIEER definition

Figure 2. State policy/guidance requires that programs/sites/buildings in state-funded preschool have access to gross motor space



State-funded preschools have access to gross motor space

- Gross motor space is required, but the location is not specified
- Outdoor space is required
- Some state funded pre-K programs require outdoor space, for others the location is not specified
- Both indoor and outdoor space is required
- None
- The state does not have a state-funded preschool program meeting NIEER definition

Endnotes

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- ²² Colorado's new universal preschool program was not included as it was not operating in 2023-24, the year to which the survey applies. Colorado Preschool Program did not answer questions related to Outdoor, Nature-Based Preschool.