

NATURE CAN IMPROVE ACADEMIC OUTCOMES

Spending time in nature enhances educational outcomes by improving children's academic performance, focus, behavior and love of learning.

BETTER ACADEMIC PERFORMANCE

Learning in natural environments can:



BOOST PERFORMANCE
in reading, writing, math, science and social studies
1, 2, 3, 4, 5



ENHANCE
creativity, critical thinking and problem solving⁹

Seeing nature from school buildings can foster academic success^{6, 7, 8}

ENHANCED ATTENTION

Spending time in nature can help children focus their attention:



FOCUS AND ATTENTION
10, 11, 12, 13



ADHD SYMPTOMS
14, 15

The greener the setting, the better the focus^{14, 15}

INCREASED ENGAGEMENT & ENTHUSIASM

Exploration and discovery through outdoor experiences can promote motivation to learn:



INCREASED ENTHUSIASM FOR LEARNING
1, 16



GREATER ENGAGEMENT WITH LEARNING¹⁷



MORE IMPULSE CONTROL¹⁰



LESS DISRUPTIVE BEHAVIOR
20

Nature-based learning is associated with reduced aggression and fewer discipline problems:^{18, 19}

SUPPORTING RESEARCH

¹Lieberman & Hoody (1998). Closing the achievement gap: Using the environment as an integrating context for learning. Results of a Nationwide Study. *San Diego: SEER*. ²Chawla (2015). Benefits of nature contact for children. *J Plan Lit*, 30(4), 433-452. ³Berezowitz et al. (2015). School gardens enhance academic performance and dietary outcomes in children. *J School Health*, 85(8), 508-518. ⁴Williams & Dixon (2012). Impact of garden-based learning on academic outcomes in schools: Synthesis of research between 1990 and 2010. *Rev Educ Res*, 83(2), 211-235. ⁵Wells et al. (2015). The effects of school gardens on children's science knowledge: A randomized controlled trial of low-income elementary schools. *Int J Sci Edu*, 37(17), 2858-2878. ⁶Li & Sullivan (2016). Impact of views to school landscapes on recovery from stress and mental fatigue. *Landscape Urban Plan*, 148, 149-158. ⁷Wu et al. (2014). Linking student performance in Massachusetts elementary schools with the "greenness" of school surroundings using remote sensing. *PLoS ONE* 9(10): e108548. ⁸Matsuoka, R. H. 2010. Student performance and high school landscapes. *Landscape and Urban Planning* 97 (4), 273-282. ⁹Moore & Wong (1997). Natural Learning: Rediscovering Nature's Way of Teaching. Berkeley, CA: MIG Communications. ¹⁰Faber Taylor et al. (2002). Views of nature and self-discipline: Evidence from inner-city children. *J Environ Psy*, 22, 49-63. ¹¹Mårtensson et al. (2009). Outdoor environmental assessment of attention promoting settings for preschool children. *Health Place*, 15(4), 1149-1157. ¹²Wells (2000). At home with nature effects of "greenness" on children's cognitive functioning. *Environ Behav*, 32(6), 775-795. ¹³Berto et al. (2015). How does psychological restoration work in children? An exploratory study. *J Child Adolesc Behav* 3(3). ¹⁴Faber Taylor et al. (2001). Coping with ADD: The surprising connection to green play settings. *Environ Behav*, 33(1), 54-77. ¹⁵Amoly et al. (2014). Green and blue spaces and behavioral development in Barcelona schoolchildren: The BREATHE Project. *Environ Health Perspect*, 122,1351-1358. ¹⁶Blair (2009) The child in the garden: An evaluative review of the benefits of school gardening. *J Environ Educ*, 40(2), 15-38. ¹⁷Rios & Brewer (2014). Outdoor education and science achievement. *Appl Environ Educ Commun*, 13(4), 234-240. ¹⁸Bell & Dymont (2008). Grounds for health: The intersection of green school grounds and health-promoting schools. *Environ Educ Res*, 14(1), 77-90. ¹⁹Nedovic & Morrissey (2013). Calm, active and focused: Children's responses to an organic outdoor learning environment. *Learn Environ Res*, 16(2), 281-295. ²⁰Ruiz-Gallardo & Valdés (2013). Garden-based learning: An experience with "at risk" secondary education students. *J Environ Educ*, 44(4), 252-270.