

GREEN SCHOOLYARDS CAN IMPROVE ACADEMIC OUTCOMES

THE ISSUE



Only 1/3 of U.S. 8th graders perform at or above standards for science and math.¹

SCHOOLS ACROSS THE NATION ARE SEEKING WAYS TO IMPROVE ACADEMIC OUTCOMES FOR ALL STUDENTS

Green schoolyards promote academic achievement through hands-on, experiential learning and by enhancing the cognitive and emotional processes important for learning.

ENHANCING LEARNING

Green schoolyards provide experiential learning across many subjects^{2,3}



33 Of 40 school garden studies (83%) found

IMPROVED OUTCOMES in science, math & language arts.²

BETTER GRADES



HIGHER TEST SCORES



ENHANCED KNOWLEDGE



ACROSS SEVERAL SUBJECTS

2,3,4



GREEN SCHOOLYARDS CAN Help students focus attention and regulate behavior^{5,6}
 Enhance attitudes and engagement with school^{7,8}
 Support creativity, critical thinking and problem solving⁹

ROOM WITH A VIEW

Seeing nature and greenery from school buildings can foster positive academic outcomes.^{10,11}

HIGH SCHOOLERS WITH VIEWS OF TREES HAD:¹²



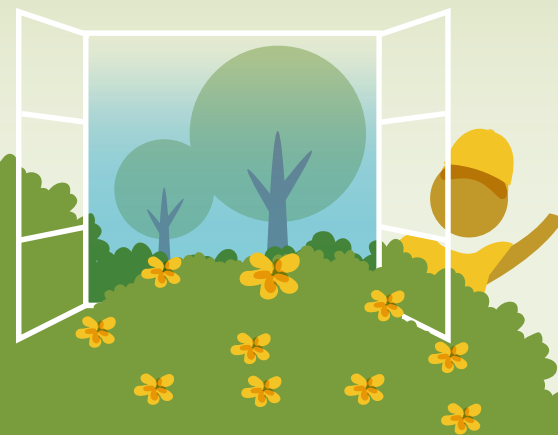
HIGHER standardized test scores



HIGHER graduation rates



HIGHER % of students planning to attend a 4-yr college



SUPPORTING RESEARCH

¹ www.nationsreportcard.gov ² Williams & Dixon (2013). Impact of garden-based learning on academic outcomes in schools: Synthesis of research between 1990 and 2010. *Rev Educ Res*, 83(2), 211-235. ³ Wells et al. (2015). The effects of school gardens on children's science knowledge: A randomized controlled trial of low-income elementary schools. *Int Journal Sci Educ*, 37(17), 2858-2878. ⁴ Berezowitz et al. (2015). School gardens enhance academic performance and dietary outcomes in children. *J School Health*, 85(8), 508-518. ⁵ Berto et al. (2015). How does psychological restoration work in children? An exploratory study. *J Child Adolesc Behav* 3(3). ⁶ Chawla et al. (2014). Green schoolyards as havens from stress and resources for resilience in childhood and adolescence. *Health Place*, 28, 1-13. ⁷ Maynard et al. (2013). Child-initiated learning, the outdoor environment and the 'underachieving child.' *Early Years*, 33(3), 212-225. ⁸ Rios & Brewer (2014). Outdoor education and science achievement. *Appl Environ Educ Commun*, 13(4), 234-240. ⁹ Kellert (2005). *Building for life: Designing and understanding the human-nature connection*. Washington, DC: Island Press. ¹⁰ Li & Sullivan (2016). Impact of views to school landscapes on recovery from stress and mental fatigue. *Landscape Urban Plan*, 148, 149-158. ¹¹ Wu et al. (2014). Linking student performance in Massachusetts elementary schools with the "greenness" of school surroundings using remote sensing. *PLoS ONE* 9(10): e108548: 1-9. ¹² Matsuoka (2010). Student performance and high school landscapes: Examining the links. *Landscape Urban Plan*, 97(4), 273-282.