

# The Value of Nature-Based Education

THE HEALTHY LANDS AND HEALTHY ECONOMIES INITIATIVE

## CASE STUDY



AG +  
OPEN  
SPACE  
SONOMA COUNTY



## CONTEXT

Sonoma County's natural landscapes provide extraordinary learning experiences for the region's children. Through field trips, extracurricular activities, and outdoor programs, Sonoma County's nearly **300 parks and open spaces** provide an outdoor classroom for thousands of students. In 2016, on Ag + Open Space properties alone, nearly **5,000 students** participated in 287 educational programs and outings.

These experiences simply can't be replicated in built-up areas. Multiple studies have found that nature-based education — education that uses the natural environment as a context for learning to complement classroom-based instruction — supports and enhances classroom learning in measurable ways, from higher test scores to enhanced critical thinking skills and increased motivation.

The county's 175 public schools utilize the region's natural capital through a number of outdoor education programs. Ag + Open Space sponsored trip destinations include Healdsburg Ridge Open Space Preserve, the Laguna de Santa Rosa, Montini Open Space Preserve, Petaluma Marsh, Taylor Mountain Regional Park & Open Space Preserve, and many more.

## METHODS

This study was based on a review of published studies that investigated the effects of nature-based education on various aspects of student learning and well-being.

## FINDINGS

### Value: BETTER TEST SCORES

In California, a curriculum model called "Environment as an Integrating Context" (EIC) combines hands-on experiences with collaborative instruction, community-based investigation, and cooperative learning in local natural and community surroundings. Studies conducted for the state department of education compared 16 demographically similar elementary schools, half with EIC programs and half without. In **42% of cases**, EIC students scored significantly better on standardized reading, math, language, and spelling tests than students in the control group. The control group students scored better in 4% of cases, and in 54% of cases there was no significant difference.

Another study, of 77 pairs of demographically similar schools in Washington State, found that students in schools with an environmental education curriculum had statistically significant higher test scores in math, reading, and writing compared with traditional schools.

### Value: FOCUS, CREATIVITY, AND CONFIDENCE

In a 2010 study, 78% of 1,900 educators surveyed believed that children who spend regular time in unstructured outdoor play are better able to concentrate and perform better in the classroom. Moreover, 75% said students who spend regular time outdoors tend to be **more creative** and **better able to problem-solve** in the classroom. The EIC study cited above also noted increases in cooperation, leadership, and confidence for students in English as a second language programs.

A controlled 2004 study on more than 400 high school students in Florida found enhanced critical thinking skills in those who had received nature-based education.

A nationwide survey of parents of children with attention-deficit hyperactivity disorder (ADHD) concluded that green outdoor settings reduced ADHD symptoms across a wide range of activities.





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Sonoma County Ag + Open Space permanently protects the diverse agricultural, natural resource and scenic open space lands of Sonoma County for future generations. We are responsible for the perpetual protection of over 116,000 acres of land throughout our region. These agricultural and open space lands are protected through a quarter-cent sales tax approved by voters in 1990 and reauthorized in 2006. For more information, please visit [www.sonomaopenspace.org](http://www.sonomaopenspace.org).



### THE HEALTHY LANDS AND HEALTHY ECONOMIES INITIATIVE

The Healthy Lands and Healthy Economies Initiative documents the economic value and community benefits of natural and working landscapes. This research helps to show that Sonoma County's investments in land conservation pay real dividends, now and into the future. This Initiative would not have been possible without contributions from the Gordon and Betty Moore Foundation, the S. D. Bechtel, Jr. Foundation, and the California State Coastal Conservancy.

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All images provided by **Ag + Open Space**.

**FULL REPORT:** Earth Economics. 2016. Nature-based education in Sonoma County. Report prepared for Sonoma County Ag + Open Space.

**AVAILABLE AT:** [www.sonomaopenspace.org/HLHE](http://www.sonomaopenspace.org/HLHE)

**RESEARCH BY:** Earth Economics — [www.eartheconomics.org](http://www.eartheconomics.org).