



# GREEN SCHOOLYARDS EVALUATION FRAMEWORK

Considerations for Measuring the Many Benefits



# THE CASE FOR GREEN SCHOOLYARDS

Research suggests that when communities green their schoolyards they will reap a variety of benefits. Access to safe, natural areas can improve children's health, including mental and physical wellness, cardiovascular vitality, weight management, ADHD and stress reduction. Health risks are higher for children within low-income and communities of color where access to green space is sparse. Therefore, nature-filled green schoolyards present opportunities for expanding healthy environments to support children's health in every community.

The number of green schoolyards programs are expanding as cities across the country mobilize to transform blighted asphalt and barren turf grass into enriched natural spaces where children learn, play and grow during and outside of school time.

The Children & Nature Network (C&NN) is aligning disparate efforts to develop and propel policy, research, partnerships and funding to scale the prevalence of green schoolyards across the United States. Regular and thorough evaluation is at the core of this work to continue to grow the evidence base across the emerging areas of interest included here in this evaluation framework.



## WHAT ARE GREEN SCHOOLYARDS?

The Children & Nature Network envisions green schoolyards as multi-functional school grounds designed for and by the entire school community that include places for students, teachers, parents and community members to play, learn, explore and grow. During out of school time, green schoolyards are ideally open for public use and enjoyment.

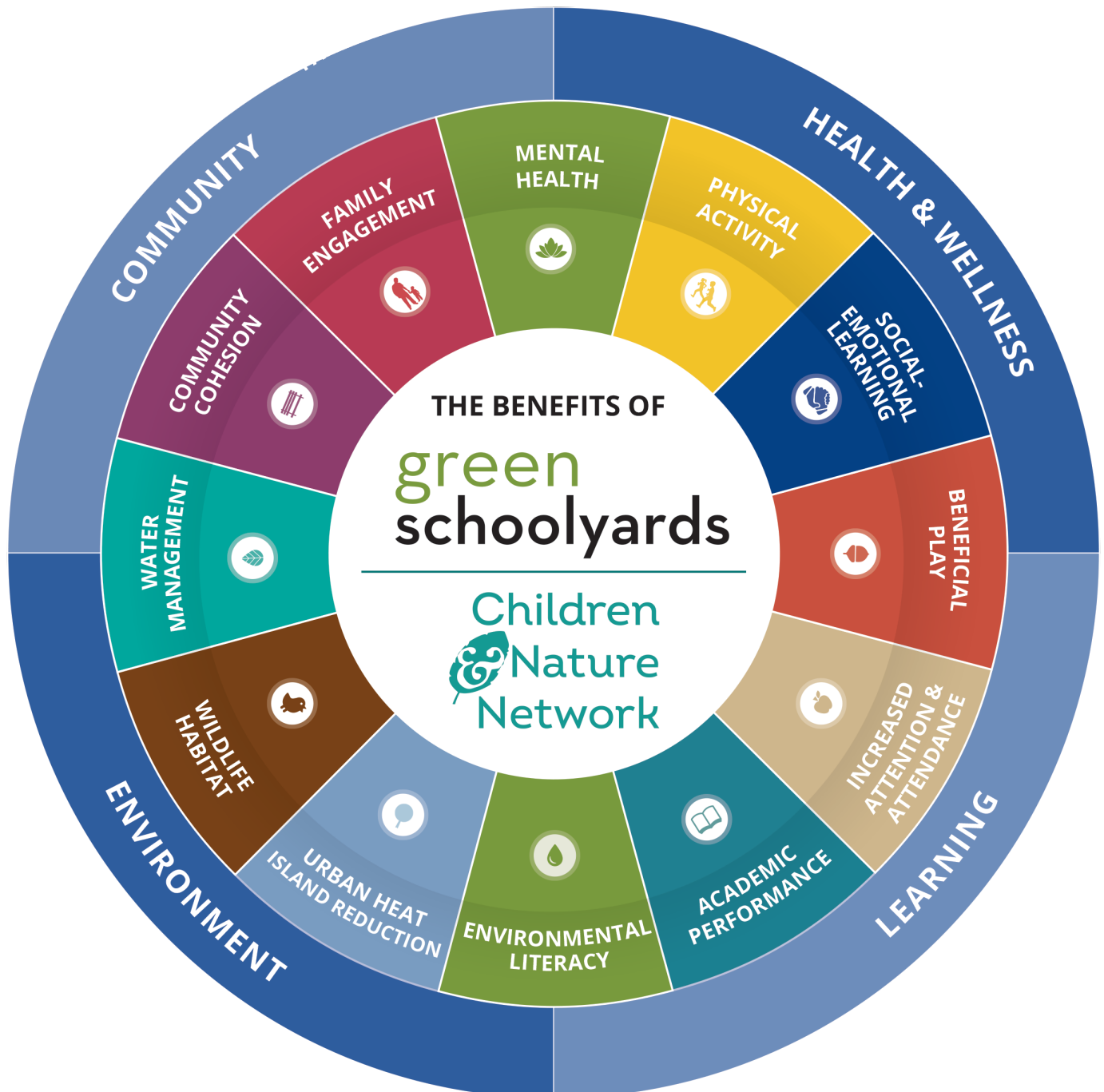
They can include:

- outdoor classrooms
- native & pollinator gardens
- stormwater capture
- traditional play equipment
- nature play areas
- edible gardens
- trails
- trees & shrubs

# THE BENEFITS OF GREEN SCHOOLYARDS

This Green Schoolyards Evaluation Framework groups potential short- and long-term outcomes of green schoolyards into four categories: health and wellness, learning, environmental and community. Under each of these categories, we listed several possible interventions that can help you think about what you can do to create or enhance green schoolyards. These interventions can have many potential positive outcomes, which are grouped into short-term and long-term for your consideration.

The Framework aligns with supporting research and measurement tools available through the [C&NN Green Schoolyards Resource Hub](#) "Evaluating the Impact" section to aid you in collecting data for green schoolyards programs.



## INTERVENTIONS

- Schoolyard greening
- Time outdoors in & out of school
- Views of schoolyards
- School & community involvement in design
- Number & types of programs on schoolyards
- Types of schoolyard elements
- Environmental Literacy Plans
- Every Student Succeeds Act
- Next Generation Science Standards
- Equitable distribution of green schoolyards

## SHORT TERM OUTCOMES

- Increased attention
- Increased academic achievement
- Increased student attendance
- Increased word usage
- Increased scientific inquiry
- Increased claims, evidence & reasoning
- Increased motivation to learn
- Increased achievement (ELL, male/female, ADHD)

## LONG TERM OUTCOMES

- Reduced rate of teenage dropout & associated societal costs
- Increased literacy
- Increased test scores
- Increased systems-thinking
- Decreased achievement gap (ELL, male/female, ADHD)
- Increased career opportunities

## INTERVENTIONS

- Schoolyard greening
- Access to green space in cities
- Time outdoors in & out of school
- Views of schoolyards
- Shade (natural & artificial)
- Number & types of programs on schoolyards
- Types of schoolyard elements
- Equitable distribution of green schoolyards

## SHORT TERM OUTCOMES

### PHYSICAL ACTIVITY & NUTRITION

- Increase in amount of physical activity
- Increase in psychomotor skills
- Improved physical health of entire school community (students, staff, parents, neighbors)
- Improved levels of physical development
- Increase in density & diversity of play

### SOCIAL EMOTIONAL

- Increased self-efficacy & action competence
- Increase in mood & mood stability
- Recovery from mental fatigue
- Recovery from stress

## LONG TERM OUTCOMES

- Reduction in long-term healthcare costs, including emergency room & uninsured
- Violence reduction
- Decreased effects of trauma (individual & community)
- Decreased bullying
- Socialization skills among peers
- Increased self-esteem

## INTERVENTIONS

- Schoolyard greening
- Number of trees
- Shade (natural or artificial)
- Rainwater capture & green infrastructure
- Types of landcover
- Biodiversity of species & ecosystems
- Park or nature within 1/2 mile of schoolyard

## SHORT TERM OUTCOMES

- Decreased energy costs
- Increased stormwater storage & filtration
- Decreased fines for discharge of untreated water into local waterways
- Lower water bills, increased tax savings
- Increased stewardship of schoolyard

## LONG TERM OUTCOMES

- Urban heat island reduction
- Reduced CO<sub>2</sub> emissions
- Positive effects of tree canopy on air quality
- Cleaner local waterways
- Development of environmental advocates
- Increased career opportunities

## INTERVENTIONS

- Schoolyard greening
- Access to green space in cities
- School & community involvement in design & art installations
- Multi-generational use
- Shared use agreements
- Number & types of programs on schoolyards
- Park or nature within 1/2 mile of schoolyard safe route to school

## SHORT TERM OUTCOMES

- Increased neighborhood safety
- Improved employee recruitment/retention
- Increased stewardship of schoolyard
- Increased parent & community comfort
- Increased community usage of schoolyard during out-of-school time
- Increased partnership capacity of school
- Increased job opportunities
- Increased ownership, self-efficacy & action competence

## LONG TERM OUTCOMES

- Decrease in crime rates
- Increased sense of community, social support/ties
- Reduction in long-term healthcare costs, including emergency room & uninsured
- Decreased effects of trauma (individual & community)
- Decreased number of abandoned buildings & vacant properties, increased property value

## PROCESS & METHODOLOGY

In 2014, the Children & Nature Network launched Green Schoolyards for Healthy Communities with a listening tour across the U.S., engaging 77 key informants across disciplines and organizations in 16 cities to determine how we might marshal resources and fuel pockets of green schoolyard programs into a national movement. Discussions with experts in the field about the variety of existing models revealed a need to align disparate resources to support broader replication and scale.

This listening tour resulted in the report, “Building a National Movement for Green Schoolyards in Every Community,” in which C&NN highlighted promising models, gaps in the evidence base and recommendations. In 2016, C&NN’s Scientific Advisory Council and staff completed a thorough review of scientific literature on green schoolyards which resulted in compelling data to promote and advocate for the benefits of green schoolyards. This resulted in an infographic series freely available on our website. This expansive research collection is housed in the C&NN’s Research Library where articles, abstracts and sources can be found in a free, searchable database.

In early 2017, C&NN convened a team of Green Schoolyards Metrics and Research Advisors for the first time in Raleigh, North Carolina, to establish indicators of green schoolyard quality, use, equity, and benefits. Advisors also identified potential qualitative and quantitative data and tools existing and needed to measure outcomes through the main categories described above. Throughout 2017, Advisors met to refine this Green Schoolyards Evaluation Framework.

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