



The San Francisco Nature Exploration Area Design Playbook

Designing Nature Experience
for Childhood in the City





SAN FRANCISCO CHILDREN'S **OUTDOOR BILL OF RIGHTS**

In which **EVERY CHILD** has the right to:

Feel welcome, safe and protected outdoors

Explore all the wild places in the city

Harvest and eat a fruit or vegetable

Plant a seed and watch it grow

Visit and care for a local park

Splash in the ocean or bay

Play in the sand & mud

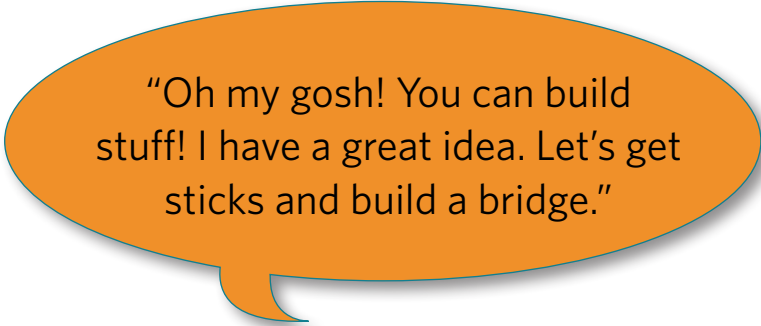
Discover urban wildlife

Sleep under the stars

Climb a tree

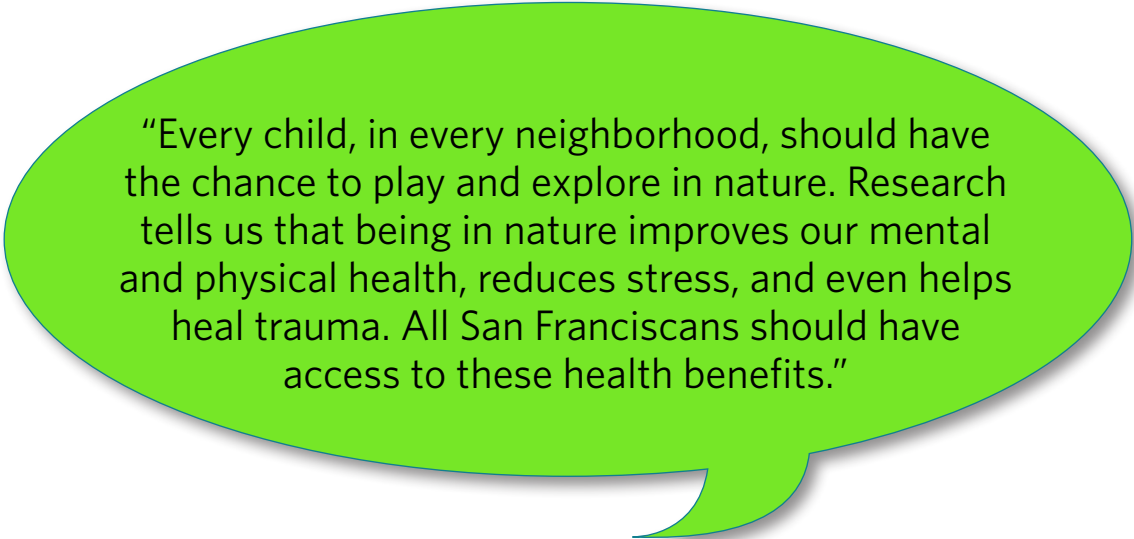
Ride a bike

In 2014, the City and County of San Francisco signed a resolution in support of the San Francisco Children's Outdoor Bill of Rights recognizing that "direct exposure to nature is a necessary component of a child's physical and emotional well-being and cognitive development." This bill represents the city's commitment to a nature-rich childhood for all children growing up in SF.



"Oh my gosh! You can build stuff! I have a great idea. Let's get sticks and build a bridge."

9-year old boy, telling his sister at
Rolph Nicol Nature Exploration Area



"Every child, in every neighborhood, should have the chance to play and explore in nature. Research tells us that being in nature improves our mental and physical health, reduces stress, and even helps heal trauma. All San Franciscans should have access to these health benefits."

SF Mayor London Breed, 2019

Connecting San Francisco children with nature

Research supports that nature connection is essential to urban populations. The latest neuroscience demonstrates that quality nature experiences are important to cognition and even minimal exposure improves creativity and mental health. Kids who play outside are smarter, happier, more attentive, and less anxious.

Yet, in recent decades, the size, quality, and access to outdoor nature experiences for children living in cities have greatly diminished, especially in densely urbanized cities like San Francisco. Children today spend less time outside than any other previous generation, to the detriment of their health and well-being. Fortunately, we can change this!

Designing for nature connection

There's a growing global movement in cities to thoughtfully infuse childhood with nature experiences by creating spaces and places where children can connect with nature through play. Natural settings for children, youth and families can be deliberately designed in urban environments by implementing features that support the vision for nature-rich childhoods expressed by the San Francisco Children's Outdoor Bill of Rights.

Over a three-year period, a San Francisco Children & Nature working group comprised of nine public agencies and organizations shared their experiences and insights, and also researched best practices, to create this resource to promote features that can be incorporated in any natural urban setting.

May these ideas inspire, inform and support the local and global endeavor to cultivate nature-rich childhoods in the everyday lives of children even in the most urban environments they inhabit.



Towards a city-wide constellation of Nature Exploration Areas

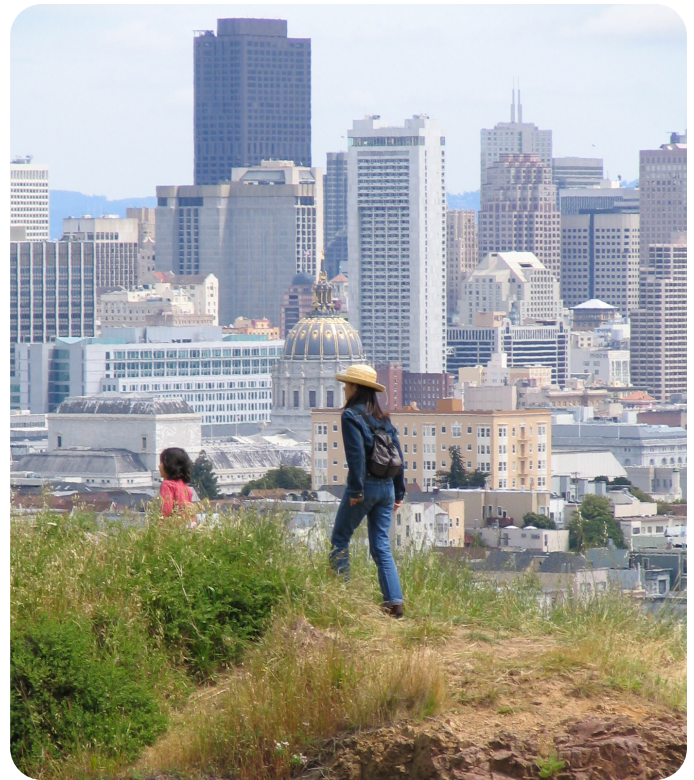
A Nature Exploration Area (NEA) is an area managed primarily for the purpose of encouraging people of all ages to engage with diverse natural elements including loose materials, fixed features such as large rocks and tree trunks, organisms, and each other. An NEA is only one type of place where children can experience nature – many of the features of NEAs identified here can be found in other public and private places.

Simply put, this Playbook is about designing spaces that meet the developmental needs of children. The following pages identify design features for nature play, exploration and connection. In order to maintain a high standard of experience in Nature Exploration Areas across the city, we have designated the first eight of these features as essential. Our supplementary Design Guide contains additional details for each design feature. The last three (optional) features are included because, where feasible, they supplement and complement the essential elements.

The vision of the San Francisco Children & Nature Collaborative is “Nature connection for every child, every day”. With this in mind, we hope this Playbook will inspire, encourage and inform the creation of NEAs throughout San Francisco, especially in equity zones. However, where NEAs are not feasible, areas that only have some of these features still have merit in promoting nature connection. For example, a “Create-with-Nature Zone” with loose natural materials but no beneficial risk elements promotes nature connection through creativity, fantasy play and constructive curiosity; a “Natural Playground” with fixed natural beneficial risk elements but no loose natural materials promotes nature connection through physical play; and nature in any form is an opportunity for nature connection.

“Risk taking is both inevitable and necessary for development and learning. The process of building up experience entails risk but also can be a source of fun. We all need to make judgments of what constitutes an acceptable level of risk.”

- Bernard Spiegall



Nature Exploration Area Design Menu

Essential features:

1. Loose natural elements
2. Beneficial risk elements
3. Ecological elements
4. Sensory & immersive experiences
5. Site boundaries
6. Welcoming signage
7. Public involvement
8. Management plan

Additional features:

9. Climbable trees
10. Gardening area
11. Place-based interpretation



1 | Loose natural elements

What are they?

Loose natural elements are sticks, rocks, leaves, pine cones, bark, sand, mud, and cut sections of tree branches or logs.

Why include them?

"Loose parts" provide for stimulating changes in the landscape and open-ended opportunities that foster creativity, critical thinking, sensory input, action, collaboration and exploration. They invite fine motor play, constructive play, imaginative play, and social play. While creating a tangible connection with nature these mobile elements empower children to shape and re-shape their play space, something rarely possible in adult-dominated environments of the city.

Best practices

- Provide an adequate dedicated area that allows for a sufficient variety and quantity of loose natural materials (at least three different kinds)
- Try to source material that relates to surrounding area, e.g. fallen leaves, pine cones, branches and bark can come from trees and plants in or near an NEA site
- Refresh materials regularly to keep NEA well-stocked since they naturally decompose or move
- Large elements such as loose stumps should be at least twice as wide as they are tall for increased stability

Resources

Find loose natural elements design ideas in our Design Guide



2 | Beneficial risk elements

What are they?

Beneficial risk features include fixed or stable elements that can be used for balancing, jumping, climbing and other physical engagement.

Why include them?

Children have a natural propensity towards risky play which offers them many valuable developmental benefits. Safety efforts should be balanced with opportunities for physical challenges through outdoor risky play. Make play as "safe as necessary" rather than as "safe as possible" for optimal child development.

Best practices

- As space allows, include a variety of beneficial risks: heights, balancing/jumping/climbing, speed (space for running), tools and others
- Natural elements like logs, stumps and rocks have higher values than manufactured elements
- Boundary features and seating elements can also invite beneficial risk

Resources

Find beneficial risk design ideas in our Design Guide



3 | Ecological elements

What are they?

Ecological elements are any features that offer habitat values and place-based ecological literacy learning opportunities. These include plantings that have wildlife values; water features; features that call attention to the natural processes of the site visually and/or experientially; and sustainability features.

Why include them?

The wonder of nature is most powerful when it's experienced as a web of interactive relationships. Particularly in densely urbanized areas of the city, ecological elements significantly increase equity and accessibility for all children to nature, less common in their immediate daily environments. Water and thoughtfully chosen plants will naturally attract wildlife such as birds and butterflies.

Best practices

- Plant San Francisco natives or ornamental plants with habitat values
- Add fresh water features of any kind which will enhance both habitat and play values
- Features that can call attention to natural processes such as wind, fog, water drainage and more

Resources

Find ecological design ideas in our Design Guide

SFPlantFinder.org identifies native plants that will thrive in your area



4 | Sensory & immersive experiences

What are they?

Sensory experiences are opportunities to use all the senses, with an emphasis on touch, smell, and taste. Immersive experiences are promoted through opportunities to be surrounded by features such as plants, boulders, logs, topography, or child-made structures.

Why include them?

Sensory-rich vegetated areas found in the natural world are rare in heavily urbanized San Francisco. Multi-sensory experiences enable the important developmental process of sensory integration. Spaces where children can feel immersed in vegetation, or have places to feel hidden, can promote a feeling of autonomy and independence – an escape from the urban environment and the adult world.

Best practices

- Plant species that offer a variety of fragrances, colors, textures and edible fruits or seeds
- Locate plants in configurations that offer immersive experiences (even large container plants can offer children a place to feel hidden or surrounded by nature)
- Strategically placed logs and stumps offer immersive full-body experiences

Resources

Find sensory and immersive experience design ideas in our Design Guide



Alamo Elementary School



Robert Louis Stevenson School



5 | Site boundaries

What are they?

Site boundaries are physical edging features that delineate an area where nature play experiences are curated.

Why include them?

With clear boundaries children can create their own vision of play in Nature Exploration Areas. Boundaries can also help supervising adults feel more comfortable in allowing children to play freely at a further distance from them.

Best practices

Site boundaries can:

- Be soft or hard, fixed or movable
- Include fencing, plant materials, rocks, logs, or simply a change of surface material - for example, an NEA could be surfaced with bark mulch while the surrounding park or open space has a different surface such as concrete, asphalt, soil stabilized paving material
- Double up in function as a “feet on ground” play element, seating, universal design element, or other need

Resources

Find site boundary design ideas in our Design Guide



6 | Welcoming signage

What is it?

Signage that identifies the space as a Nature Exploration Area welcomes and informs visitors about guidelines and suggestions for use.

Why include it?

Because NEA features and uses may be unfamiliar, and guidelines may differ from adjacent areas, signage invites and guides users to engage in active, exploratory, and creative activities in the designated area.

Best practices

- Use visual icons and multilingual text
- Standardize signage with consistent fonts, logos, and color so all NEA signs are recognizable as part of a city-wide constellation
- Provide place-based and interpretive information (see Feature 11 “Place-based interpretation”)

Resources

Find a standard San Francisco Children & Nature “[Nature Exploration Area](#)” [sign file](#) on our website



7 | Public involvement

What is it?

It's the thoughtful engagement of stakeholders to ensure its success over time. Listening to interests, dreams, visions and concerns helps inform a site's design and care in its pathway from prototyping to long- term stewardship.

Why include it?

Public involvement can be an opportunity to strengthen community ties and create future caretakers of the site. This process is also educational and empowering to the community including children. Children are often the best link between designers, city officials and the community at large because they have boundless imagination and creativity.

Best practices

- Identify and engage stakeholders at the outset for new projects
- Communicate the many values of nature experience
- Design an inclusive process where the local community, including children, can express, advocate, and create the spaces they would like to experience

Resources

Additional public involvement guide points can be found in our Design Guide



8 | Management plan

What is it?

A site management plan establishes policy and procedures for post-construction maintenance of an NEA.

Why include it?

Sites that are adequately cared for feel welcoming, safe and protective. A management plan is essential for sustaining quality of experiences within designed Nature Exploration Areas.

Best practices

- Share value of Nature Exploration Areas with maintenance staff
- Create volunteer opportunities (for children and adults) and neighborhood work days to build stewardship and community
- Repair fixed elements and resupply loose natural elements

Resources

Find guidance about management plans in our Design Guide



9 | Climbable trees

Additional feature

What are they?

Trees that can be climbed in sites that allow tree climbing.

Why include them?

Tree climbing encourages strategic thinking while navigating from branch to branch and requires problem-solving to find ways to climb down. It develops spatial awareness as children experiment with fitting and moving their bodies through tight spaces. It develops strength, coordination, and the ability to assess risk. It can also foster social skills as children share the same tree, assist each other, and learn to cooperate by taking turns.

Best practices

- Evaluate existing trees for tree health and "climbability"
- Plant tree species with structural integrity and low climbing branches for younger ages. Local examples are coast live oaks and Australian tea tree.
- Prune trees with climbability in mind – leaving lower branches intact

Resources

Find tree and tree climbing recommendations in our Design Guide



10 Gardening area

Additional feature

What is it?

A place for growing, tending and observing the lifecycle of edible and decorative plants.

Why include it?

Gardening is a compelling way to provide health, learning and psychological benefits for mental and physical health. It connects children to the natural world through their senses, increases ecological literacy, helps children develop executive function (mental processes that enable us to plan, focus attention, remember, and juggle multiple tasks), and invites learning about the cultural realm of food.

Best practices

- Children are less likely to walk on small plants when they are in raised beds, which can bring plants into children's reach and view
- Label plants to identify them
- Plant species that offer a variety of textures and scents
- Plant native species that provide year-round blooms for pollinating insects and birds
- Avoid invasive and toxic plant species
- Grow perennials and annuals together, planting perennials in the ground for long term success where possible, and use succession planting to ensure that something is always growing in the garden

Resources

Find gardening area design ideas in our Design Guide



San Francisco Botanical Garden



11 | Place-based interpretation

Additional feature

What is it?

Place-based interpretation provides opportunities to further inform and provide interactive hands-on learning about the site's specific ecology, cultural history and sustainability.

Why include it?

Our sense of place connects us in meaningful ways to where we live and play. Stories about the enduring cultural and natural history of the places where NEAs are created can be interpreted in a wide range of approaches ranging from subtle graphics embedded in cement to artistic tiles to temporary or permanent murals or educational signage.

Best practices

- Research about the natural and cultural history of your site (there are many online sources of information for all areas of the city)
- Simple story-telling details can often be more effective than wordy signage
- Install artwork as a fund-raising strategy (e.g. commemorative donor family tiles)

Resources

Find place-based interpretive examples in our Design Guide



It's about a sense of place,
a sense of belonging to place
as well as a sense of wonder.

San Francisco Children & Nature

A City-wide Collaborative

SF Children & Nature is a cross-sector collaborative of youth-serving, health, environmental justice, and nature-focused organizations, that works to ensure all children & youth growing up in San Francisco have the opportunity to PLAY, LEARN and GROW in NATURE. Together, we make it easier for youth to have frequent quality experiences in nature by creating opportunities for nature connection at early education sites, schools, neighborhoods and city parks, and advocating for places, programs and policies that support our mission.



A National Initiative

We were founded in 2017 as part of Cities Connecting Children to Nature (CCCN), a national initiative of the National League of Cities and the Children & Nature Network, to inspire and support cities, city leaders, and local partners to prioritize access to natural green space, nature-based recreation, and outdoor experiential learning opportunities for underrepresented children.



Thinking globally, this work also aligns with San Francisco's commitment to UNICEF's Child Friendly Cities Initiative to establish safer, more just, equitable, inclusive and child-responsive cities and communities around the world.

For more information visit www.sfchildrennature.org | info@sfchildrennature.org

Playbook Project Acknowledgements

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"Congratulations...
the new Forest Hill recycled wood and logs play
structures are being used in outdoor play!"

SFMTA's Senior Manager Kerstin Magary
(e-mail to colleagues, August 2020)

Nature for Every Child, Every Day

