

NATURE PLAY GUIDELINES

GUIDANCE ON INCORPORATING NATURE PLAY IN PUBLIC SPACES

PREPARED FOR:



Cities
Connecting
Children to
Nature
AUSTIN, TX



ACKNOWLEDGMENTS

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Front cover photo: Fairy pavilion at Walnut Creek Metro Park.

Photo by City of Austin - Parks & Recreation Dept.

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01 EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

This document is intended to provide guidance to City of Austin Parks & Recreation staff, contractors and vendors hired through the City of Austin, and other Partners (Austin ISD and other schools, Non-Profits, etc.) in the design, installation, maintenance, and management of nature play spaces. For the purposes of this guide, a nature play space is defined as a designated area for all ages and abilities, which encourages creative and unstructured play while exploring natural materials.

Photo (opposite): Will Smith Zoo School at the San Antonio Zoo. Photo (top) Balance log at Wooldridge Elementary Green School Park. Photos by City of Austin - Parks & Recreation Dept.



GOALS OF GUIDE

The addition of nature play spaces to City of Austin green spaces helps to achieve the goals of the Cities Connecting Children to Nature initiative—Nature Play Strategy, whose vision is to activate city parks, natural areas and recreation centers through the installation of nature-based play elements. It further aligns with larger City priorities, including Strategic Direction 2023, Imagine Austin, and the Parks & Recreation Long Range Plan, as well as the Austin ISD Sustainability Plan goals around nature. Specific aims of this Guide include:

- Provide the opportunity for increased nature connection
- Provide play opportunities in areas that are otherwise unsuitable for a traditional playscape

- Activate underutilized park space
- Invest in communities that have historically and are currently the most impacted by systemic racism, underinvestment in green spaces, and inequitable access to resources

HOW TO USE THE GUIDE

While readers are encouraged to review the guide in its entirety, each section of the guide has been written with specific audiences in mind:

- **How to Get Started**—Covers site selection and design guidelines and is geared towards schools, childcare centers, and other partners.



Log exploration at the Luci and Ian Family Garden at the Lady Bird Johnson Wildflower Center. Photo by City of Austin - Parks & Recreation Dept. Photo (opposite): Earth Camp. Photo by City of Austin - Watershed Protection Dept.

- **Funding**—Covers sources of funding both within and outside of the City of Austin and reviews what needs to be funded; geared towards schools, childcare centers, and other partners.
- **Procurement & Sourcing**—Covers what nature materials are most appropriate for nature play, and where to find natural materials for building both within and outside of City of Austin processes; geared towards City of Austin staff, childcare centers, schools, and other partners.
- **Safety**—Covers liability, existing safety standards, and safety concerns and is geared towards City of Austin playground staff, schools, childcare centers, and other partners.
- **Signage**—Covers the different types of signs that can be included in a nature play space and best practices for those signs; geared towards City staff and partners.
- **Maintenance**—Covers maintenance requirements of natural materials

and is geared towards City of Austin maintenance staff, schools, childcare centers, and other partners.

- **Management**—Covers programming, outreach, and evaluation and is geared towards City of Austin staff, schools, childcare centers, and other partners.

DISCLAIMER: The guidance provided here is a combination of best practices from across the world as it relates to nature play and nature play spaces. These guidelines may change based on new techniques developed and the latest research. This guide is not meant as a substitute for standard playground safety, but as a complement to those rules and regulations.

02 OVERVIEW



OVERVIEW

As we seek to incorporate nature play into the City of Austin Parks and Recreation Department (PARC), readers are asked to keep the following generalities about nature play in mind.



PHILOSOPHY OF NATURE PLAY

- Enables one to learn about the natural world while exploring and playing within it, thereby gaining a better understanding of how one is connected to that world
- Brings nature into people's play and learning environments
- Is self-directed, allows for autonomy over the experience and choice of action
- Provides the opportunity to build physical, social-emotional, and mental well-being
- Engages all the senses, and encourages exploration and curiosity
- Allows for children to gradually increase the amount of risk with which they are comfortable

DEFINITIONS

The following definitions have been developed to provide consistent language and understanding around nature play for the City of Austin. While we understand there are many variations on how people define nature play, we ask that staff refer to the definitions below when designing, building, and communicating about nature play.

NATURE PLAY

Definition: Nature play is any type of play that involves the interaction with or use of objects that nature provides.

Description: Nature play is unstructured, intuitive, and allows for choice and appropriate risk; for multigenerational play, cooperative or solitary play, and can be imaginative or

constructive. Nature play is often a blend of materials and experiences to create purposely complex interplays of natural and other objects.

Examples: Nature play often includes the interaction with tree pieces, plant parts, rocks or fossils, puddles, dirt, sand or mud, and natural landforms (hills, streams, etc.). Nature play can take place both indoors and outdoors.

NATURE PLAY SPACE

Definition: A nature play space is a defined area for all ages and abilities, which encourages creative and unstructured play while exploring natural materials.

Description: Nature play spaces can be incorporated into areas such as parks, childcare centers, schools, libraries, and backyards, and can be created both indoors and outdoors. They are designed by considering the type of play, age of intended user, type of audience, amount of use, weather, and other related factors. A nature play space includes elements such as boulders, logs, gardens, nature trails, vegetation, acorns, pinecones, sticks, etc.

Examples: Where a nature play space is added will greatly determine how a nature play space is designed. Inside a classroom, it can be as simple as adding live plants and animals for children to care for or installing natural materials for loose parts play (often seen being used for sorting, stacking, designing, etc.). In a backyard, it may include a mud kitchen or an herb, vegetable, or habitat garden. In a city park, it could include large tree pieces for climbing, a sand digging space, dry creek bed, or large loose parts for a natural building station.

BENEFITS OF NATURE PLAY

Research has shown that kids who learn and play in nature are healthier, happier, and smarter:

- Physical—improved eyesight,^{1,2} physical strength, balance, coordination, increased physical activity,^{5,6} reduced risk of obesity⁷



Nature play space at Pease Park. Photo by Pease Park Conservancy.



Child exploring water flowing through a limestone boulder.
Photo by Lady Bird Johnson Wildflower Center.

- Emotional—calm and less stressed⁹/better able to cope with stress,⁸ increased self-esteem,^{20, 21} increased resiliency^{8, 23}
- Social—more cooperative with others/cooperative learning with others⁹
- Cognitive—reduces symptoms associated with ADD¹⁰ and ADHD,¹¹ better self-discipline⁴ and problem solving ability,²² increased creativity,²² disruptive behavior disorders more readily calmed,³ increased focus and attention^{14, 15}
- Academic—improved executive function (following directions, working cooperatively) in the classroom after use of/experience in nature, improved grades and test scores,^{12, 13} increased enthusiasm for learning¹⁶
- Nature connection/stewardship—want to protect what we love, pro-environmental behaviors^{18, 19}
- Play is more varied, lasts longer²⁴

FINANCIAL AND ECONOMIC BENEFITS:

- Bring in additional sources of funding²⁷
- Sourcing of nature-play materials:
 - Re-use of otherwise discarded materials²⁹
 - Interdepartmental sourcing—sustainable operations that optimize City budgeting and reduce resource waste³⁰

ENVIRONMENTAL BENEFITS:

- As a living system, nature-based spaces can provide habitat for wildlife²⁵
- Replacing use of asphalt, concrete, and rubber with mulch, grass, gravel:
 - Can provide breaks to the urban heat island effect²⁶
 - Allows for better water infiltration and decreases stormwater runoff²⁸
- Adding trees and other vegetation improves:⁵⁰

- Air quality
- Health
- Carbon sequestration

CITIES CONNECTING CHILDREN TO NATURE

Cities Connecting Children to Nature (CCCN) is a national initiative that seeks to create more equitable and abundant access to nature in cities through a partnership between the National League of Cities Institute for Youth, Education, and Families and the Children & Nature Network. CCCN supports robust citywide action plans to implement policy, develop new partnerships, amplify nature-based programming, and create more equitable nature access. The initiative seeks to ensure that a connection to nature becomes an integral part of city priorities, planning and policymaking across a range of areas, including community health and wellness, education, out-of-school programming, job creation, transportation and land use.

In March of 2016, the City of Austin was one of seven cities nationwide selected to receive a planning grant from the project partners for Cities Connecting Children to Nature. The grant funded a six-month strategic planning process, spearheaded by the Parks & Recreation Department (PARD), that brought together representatives from ten city departments, Austin ISD, the health sector and nonprofit organizations in order to create a 3-year Implementation Plan that identified how city leadership could provide abundant and equitable access to nature for the children of Austin, with a specific focus on children in low-income communities and children of color. In October 2016 the City of Austin was awarded additional funds to execute the plan, and in July 2018 PARD created and hired a full-time, permanent CCCN-Austin Program Coordinator. An additional temporary, full-time Coordinator position was funded by the Watershed Protection Department in October 2020.

CCCN-Austin is now working to achieve equitable connection to nature for children through five key strategies: Green School

Parks, Early Childhood, Youth Leadership, Nature Smart Libraries, and Nature Play. The vision of the Nature Play Strategy is to activate city parks, natural areas and recreation centers through the installation of nature-based play elements. Nature Play further aligns with wider City goals, including Strategic Direction 2023 (Health & Environment), Imagine Austin, and the Parks & Recreation Long Range Plan, through the reuse of natural materials, play installations which provide healthy and accessible means for recreation, leveraging partnerships, and community co-creation.

CHILDREN'S OUTDOOR BILL OF RIGHTS

Discrimination and racism in the United States have had profound effects on human settlement patterns and on protections for the nation's natural areas. Historical & current systemic racism have led to Austin's natural spaces being unevenly distributed and accessed. Recognizing and acknowledging this inequity, the Parks and

AUSTIN CHILDREN'S OUTDOOR BILL of RIGHTS

WHEREAS: Studies show that children who learn and play in nature are healthier, happier and perform better in school.

WHEREAS: Children who have safe access to parks, zoos, nature centers, lakes and rivers, and other public outdoor spaces are more resilient, have higher self-esteem, are more confident, are better problem solvers and are more creative.

WHEREAS: All children of all ages, backgrounds, and abilities should feel welcome at all of Austin's parks, pools, trails, waterways and open spaces.

WHEREAS: Communities in disadvantaged areas with access to nature benefit from greater health equity with lower rates of mortality and disease.

WHEREAS: Children who develop a positive relationship with nature are more likely to become tomorrow's stewards of our natural heritage.

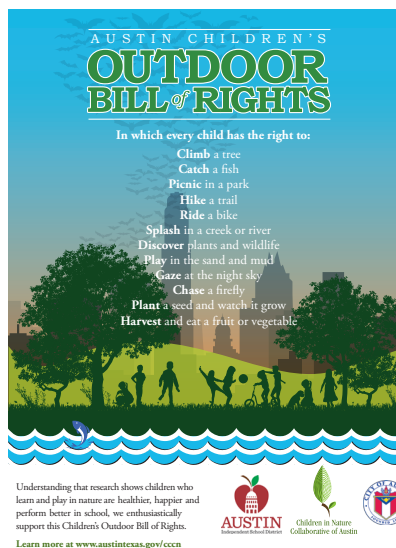
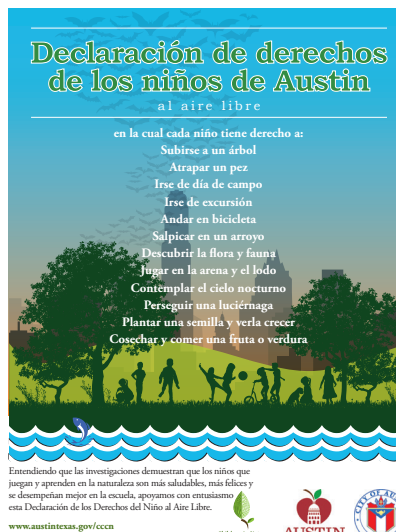
WHEREAS: Through its parks, trails, waterways, open spaces, and other natural spaces, Austin provides a wide variety of quality outdoor opportunities.

THEREFORE: We support this Children's Outdoor Bill of Rights in which children of all ages, backgrounds, and abilities have the right to:

- Climb a tree • Catch a fish • Picnic in a park • Hike a trail • Ride a bike
- Splash in the creek or river • Discover plants and wildlife
- Play in the sand and mud • Gaze at the night sky • Chase a firefly
- Plant a seed and watch it grow • Harvest and eat a fruit or vegetable



Learn more at www.austintexas.gov/cccn



Recreation Department, along with dozens of partner organizations, created the **Austin Children's Outdoor Bill of Rights (COBOR)**. Austin City Council unanimously voted to pass the COBOR on January 26, 2017 with the support of more than 1,000 citizens, key partners such as Austin Independent School District, and Mayor Steve Adler.

The creation of a Children's Outdoor Bill of Rights allowed Austin to illustrate what equitable access to nature should look like and established a common foundation and high aspirations for nature connection in our community. The COBOR served as a platform to launch the CCCN Austin initiative and included a celebration at City Hall, with local media and children from Barrington Elementary School, the city's pilot Green School Park. The COBOR was developed in tandem with the CCCN Austin **Nature Equity Map**, which identifies areas in Austin where children lack access to their outdoor rights. This map is a tool used to inform decisions on where to focus resources and programs as a first step in reversing the current inequities surrounding children's safe access to nature in the city.

COBOR Posters. Photo (opposite): Nature play space Wooldridge Elementary Green School Park. Photo by City of Austin - Parks & Recreation Dept.

03 HOW TO GET STARTED



HOW TO GET STARTED

As we seek to incorporate nature play into the City of Austin Parks and Recreation Department (PARD), readers are asked to keep the following generalities about nature play in mind.

Potential steps

PLANNING, ENGAGEMENT, DESIGN AND IMPLEMENTATION PROCESS

Creating a sustainable nature play and learning place is a process with many possible steps, which may not all be required for every project. The five key stages are outlined below:

I. Initiating the planning process

01. Create a coordinating committee and stakeholder group, and possibly a nonprofit organization; or
02. Collaborate with an existing organization;
03. Engage with prospective government and nongovernment partners and collaborators;
04. Find a suitable site;

II. Defining the community engagement process

05. Define the scope of the project;
06. Organize a participatory design process;
07. Search for kick-off funding support;
08. Appoint a designer and/or site manager;
09. Conduct a community survey;
10. Organize a stakeholder design workshop;
11. Organize a children and youth design workshop;
12. Produce a progress report;

III. Creating a design program/design

13. Develop a design and management program;
14. Create a site design with continued support of the coordinating committee;

IV. Raising money

15. Launch a capital campaign;
16. Use the completed master plan as a fund-raising tool for construction funding;
17. Execute value engineering if necessary;

V. Implementing the project

18. Move ahead with construction documents and selection of contractor(s), once funding is secured;
19. Appoint a manager and program staff;
20. Invite the community to a ground-breaking ceremony;
21. Proceed with construction/installation;
22. Organize a grand opening/ribbon-cutting ceremony;
23. Manage the site for success.

SITE CONSIDERATIONS

SITE ANALYSIS

Once a site is selected, it's important to perform a comprehensive site analysis prior to beginning design. Each site will have a combination of strengths and weaknesses that should be considered in order to optimize its possibilities for nature play. In addition, it will be necessary to look beyond the site to understand how users may access the proposed nature play program and to create a context-sensitive design.

Soil

A basic soil test can provide a key to understanding the likely outcomes of various design choices. For example, plant species have different tolerances for pH levels, chemicals and nutrients found in soil, and the amount of water that a soil can hold. Successful plant choices therefore rely on a knowledge of the soil's underlying characteristics. If the project will have a vegetable or other non-native garden, knowing the pH, organic matter, and nutrient levels of the soil can give you information on what

amendments may be needed for the types of plants selected, or whether more suitable soil should be brought in from elsewhere. Soil is made up of sand, silt, or clay, and the ratio of these three components is known as soil texture. Knowing the texture of your soil will give you a sense of how quickly water will leave your site. A mostly sandy soil will drain quickly, while a mostly clay soil will hold water for longer. In addition to plant preferences for fast- or slow-draining soils, the information can affect your play surfacing. If mud play is the goal, a clay soil that stays wet for a long time can enhance this type of play. If the site is too wet, however, alternative surfaces that shed water quickly or designs that focus play in drier areas should be considered.

In urban redevelopment or areas where the site history is uncertain, soil tests that test for toxic metals or other contaminants are advised, especially if children will have close contact with the soil for gardening, mud kitchens, or other soil-based play. Reach out to your local agricultural extension agent, university, or municipality to find out how to perform this type of soil test.



Mini-world at Faith Lutheran Child Development Center. Photo by City of Austin - Parks & Recreation Dept.

Vegetation

Review the existing vegetation on the site. Are there unique species or plant communities that should be preserved as part of the design? Invasive or poisonous species that should be removed? Any trees surrounding the intended play area should be inspected by an ISA Certified Arborist to ensure they pose no elevated risk to users of the area. If there is thick vegetation, it's important to consider the impact this will have on sightlines and safety considerations for children and their parents.

The existing pattern of shade and sun on the site should also be considered. Does that pattern provide for a comfortable play experience, or will additional tree planting be needed? It is also important to look at the condition and age of existing trees. If the site is populated with one species all the same age, it is likely that a shady site could change dramatically when those trees reach the end of their lifespan or become targets of insects or disease. Designing a planting plan that includes diverse, well-adapted species will increase the resiliency of the site

and will enable new trees to provide shade for the play space as older trees lose vigor.

Slope and Drainage

Sloping sites present many design opportunities for nature play. Slopes can be incorporated into climbing structures, tunnels, and embankment slides, and provide the ability to create separate spaces with differing activity levels. Low spots may create areas where children can feel a sense of shelter for quiet play, where hilltops can become places that provide the prospect of further site exploration and adventure.

Slopes also present design challenges. Creating equitable access to nature play spaces will require an analysis of the existing topography and site access points, and a plan to provide points of entry for users with physical challenges.

Drainage and Natural Waterways

Similarly, site drainage patterns present both design opportunities and challenges for nature play. Understanding how much water

your site receives in an average rain event and how that water moves through your site can create opportunities to slow and hold water for play or vegetable gardening, or to direct it toward planting areas, rain gardens, or other water-related design features.

Creeks and rivers that intersect the site can become places for learning about and interacting with unique species of plants, insects, and other animals. They can be incorporated into the overall design in a variety of ways. Because they are ever-changing features in the landscape subject to flooding and erosion, nature play features within riparian zones will need to be installed to withstand or naturally dissolve under those forces. Sloping areas provide the opportunity to slow stormwater down through a series of berms, and to guide rainwater towards gardens in lower areas. Additional permitting or regulatory approval will be required for any features designed to be permanently placed within a riparian zone.

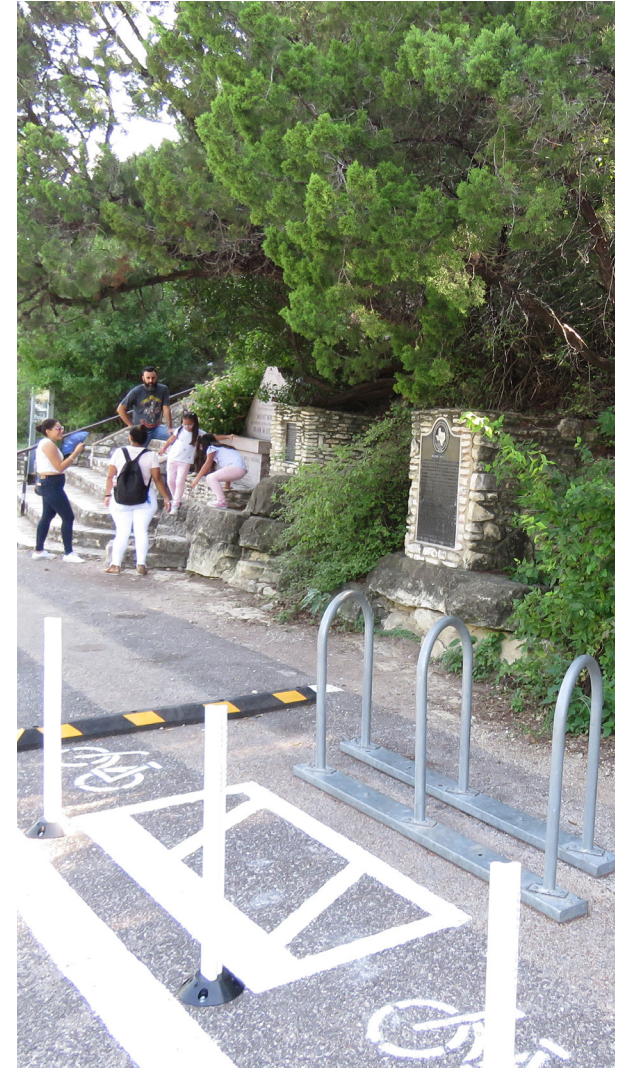
Site Context

Looking beyond the site can provide clues to when, why and how users will access the play space, what wayfinding may be required, and the number and frequency of users a nature play space might draw, which will further inform maintenance considerations. Some things to note include:

- What transportation options exist nearby? Are there bus or train stops, or an All Ages and Abilities bikeway?
- Are there sidewalks that lead into the site? Are they accessible?
- Is there existing bike parking or will it need to be installed? Consider visibility from park entry points, shade and ease of approach.
- How densely populated is the surrounding neighborhood? Can your design accommodate the likely number of users? Do you have the maintenance budget to service the expected number of users?

- Are there schools, childcare centers, or after-school programs nearby? Is there an obvious route for those groups to get to the site?
- What wayfinding or signage can help lead new users to your site?

Additionally, the broader natural and cultural ecosystem surrounding the site can give design inspiration, weaving the nature play experience into the neighborhood's underlying fabric. For example, are there nearby creeks, rivers, locally abundant tree species, rock formations or other natural features that can inspire the material choices for the site? Does the neighborhood have an abundance of murals, local businesses, or other cultural markers that the project could draw from? How can the site and its surroundings inform material choices, design layout, themes, colors and textures of the project?



Bicycle parking at Mount Bonnell. Photo by City of Austin - Transportation Dept.



Nature play space at Wooldridge Elementary Green School Park. Photo by City of Austin - Parks & Recreation Dept.

BARRIERS TO PARTICIPATION

ADA & PHYSICAL ACCESSIBILITY

Equal access to recreational areas when facilities are built or altered is a mandate of the Americans with Disabilities Act (ADA). These features include accessible parking spaces, routes, seating areas, etc. The more that natural areas are accessible, the broader the connection to nature can be for all, meeting the ADA's goal of full participation. It is advised to gather community feedback and recommendations from industry ADA professionals prior to installing a nature play area. For additional information on ADA requirements, visit www.ada.gov or for specific information regarding the enforcement of ADA with local government's parks and recreation facilities visit [Enforcing the ADA Part 2](#).

RISK PERCEPTION

Caregiver concerns/anxiety of children in their care getting injured have proven to be an important reason for the decline of young children's opportunities for outdoor nature play. Nature play can have a risk of injury, but

it is reasonable to place those risks in context of other dangers and understand that the risks are no different than other modified natural areas (trails, playing fields, etc.). Education about nature's minor risks as well as the major benefits from nature play should be provided during community engagement, onsite instruction, and through graphics/signage.

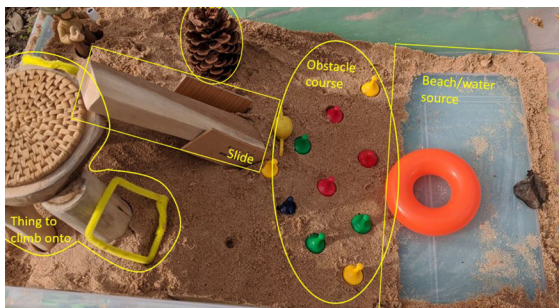
EQUITY AND INCLUSION

When choosing a site for nature play, it's important to consider access to nature through an equity lens. Access to nature has historically been restricted for communities of color, low-income communities, and other marginalized groups in urban areas. In order to help prevent equitable disparities, it is recommended to be intentional where the nature play areas are located and how they interact with the community as a whole. Will the area be accessible by public transportation? Will the area feel welcoming by all? If the area is located on school grounds, will the community have access during nonschool hours? Will the communication/marketing efforts be as diverse as the community in which you are working? When providing community

engagement opportunities, ensure participation includes a diverse representation and combination of community members in order to not further socio-economic degradation. Building nature play areas that provide a connection to those in the community is necessary to be ambassadors for social equity.

COMMUNITY ENGAGEMENT

Community engagement is the process by which an organization will consult, involve, listen and respond to the community through ongoing relationships and dialogue. It is the opportunity to collect information and determine the features wanted, possible use, cultural perspectives, and ensure the whole community is part of the conversation.



Example park design built by a child during MLK Station Jr. Nature Play Space community engagement activity. Photo by City of Austin - Parks & Recreation Dept.

PROCEDURE FOR COMMUNITY ENGAGEMENT PLANNING

1. Complete preliminary Community Engagement Planning:
 - a. Identify the decision maker(s) or stakeholders and how decisions will be made.
 - b. Clarify the scope and purpose of the community engagement.
 - c. Identify preliminary stakeholders and issues.
 - d. Identify the community engagement communication objectives, level of engagement, and desired outcomes.
2. Develop a comprehensive stakeholder list.
3. Complete an Inclusive Public Engagement Plan:
 - a. Include key activities, milestones, timelines, and resources.
 - b. Develop a detailed work plan that includes specific engagement activities based on the overall strategy.
 - c. Identify and make use of appropriate resources consistent with the defined roles, issues, audience, and resources.
 - d. Create an outreach strategy to target typically unengaged individuals and communities where historic marginalization has occurred.
4. Enact plan and communicate results.
5. Evaluate efforts and report to decision makers.

Engagement methods will differ depending on if you are working in a public or a private space. Since nature play is often a new concept to many people, having engaging, hands-on examples for the community to explore is an effective way to introduce the idea. Co-designing the site can also be a great way to involve the public (adults and children alike!) in determining what features they would be most interested in using. PARD's **Loose Parts Lending Kit**, a set of kits containing a variety of natural materials to create and build with, can be checked out for these purposes.

Techniques for Sharing Information	Techniques for Collecting and Compiling Input	Techniques for Bringing People Together
Community Mapping	Web-based Engagement	Roundtable/Consensus Building
Presentations	Surveys	Community Advisory Groups
Education	Public Meetings	Focus Groups
Press Releases	Workshops	Working Groups
Social Media Outreach	Forums	Technical Advisory Committee
Direct Mailings	Interviews	Implementation Committee
Fact Sheets	Open Houses	Charrettes
Brochures	Email Questionnaires	Hands-on Nature Play Activities
Newsletters	Open Space Meetings	Visioning
Webpages	Comment Forms	Focused Conversations
Reports and Summaries	Online Community Forums	Co-design
Direct Stakeholder Emails	Interviews	Field Trips and Tours
	Neighborhood Canvassing	Representative Participation

DESIGN GUIDELINES

Children need a variety of nature play features in order to develop their cognitive, social, imaginative, and physical growth and development. Nature play spaces at schools, childcare centers, recreation centers, parks, etc., also provide a close-to-home connection to nature. When designing these spaces, several factors should be considered to ensure you create a space that is inviting, welcoming, and accessible to all.

It is also important to consider the scope of a project (budget, size of space, audience served, etc.), as larger more complex areas may warrant outside assistance. Depending on the level and complexity or scope of your project, you may be working with a contracted designer, landscape architect, or other licensed professional. If design assistance is acquired, communicating the practical concerns around the use of the space (where does trash go, can a mower get in/around, etc.) can save headaches later.

DESIGN INTENT

Once you've completed your site analysis, you can begin to design the space. Consider if you are designing a general area that could include several types of play spaces and features (such as a gross motor play area with a mud kitchen and embankment slide), or do you have a primary focus to your site (i.e., STEAM, pre-K age, or family engagement)? A primary focus can still have supporting themes, but it will help to have a primary goal in mind. You'll also want to consider the types of play and how you'll define the space both for play and functionality in your design. For safety considerations, refer to the **Safety** section.

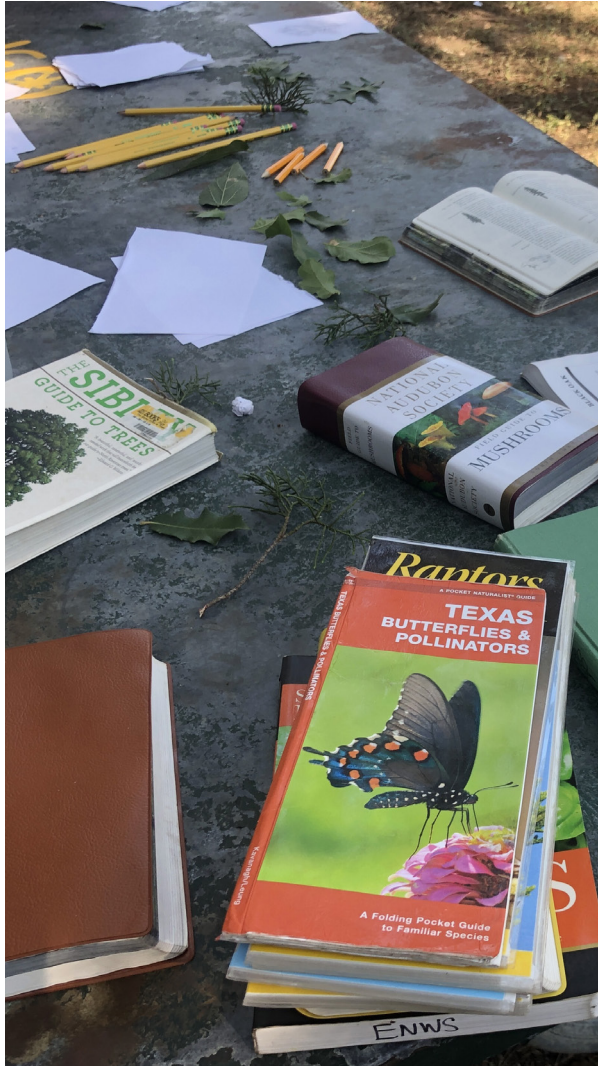
SUBJECT MATTER

Art and Music

Kids love the opportunity to play with, hear, and interact with sound and music. It is beneficial to include opportunities for a child to be both inspired by art and to be artistic themselves. Elements can include wall murals/easels, sound gardens, children's art, nature



Child playing with nature-based musical feature at Casey Elementary School. Photo by City of Austin - Parks & Recreation Dept.



Educational guides used during programming from Earth Native Wilderness School at Walnut Creek Metro Park. Photo by City of Austin - Parks & Recreation Dept.

art, and materials that can be used to create art and music.

Art activities and spaces help build an understanding of color theory and spatial relationship, while playing music builds confidence, encourages creativity and self-expression. And it's all fun!

Science Exploration/STEAM

Typically, this is the most frequently considered area for nature play spaces since plants and other natural features are already occurring in an engaging way. These areas provide a good “hook” for children and adults who may think they don’t like science to be pulled in. Existing nature easily provides a connection to science-based topics, such as the parts of a plant, life cycles, categorizing items, cause/effect, observation and exploration, etc.

Literacy

Literacy development is easily transferred to nature play spaces and is often seen in the form of story trails, alphabet gardens, vocabulary connections, places to read, drawing

letters in the dirt, or using nature to tell stories. Nature can help remove barriers that are inhibitive to learning, such as reading outdoors under a tree instead of at a desk in a classroom to help stimulate children with literacy learning challenges.

Culture

Incorporating the culture of your visitors, such as the surrounding neighborhood or native communities in the area can be one way to help hesitant families become more comfortable with the idea of nature play in general. Community engagement is critical to identify what your visitors feel is important to have represented. Cultural additions can include things like food gardens specific to different cultures and art/artifacts of indigenous communities.

TYPES OF PLAY

Gross and Fine Motor

Gross Motor – upper body and core strength are foundations upon which little bodies rely to build coordination, cognitive, and neural

development. Core body strength and cross body motion can help with attention and emotional self-regulation. The vestibular system gathers information from all the five senses and gives a child a sense of where they are in space. Spinning, rolling, swinging, falling, jumping, balancing - all help develop this system that later helps reduce impulsivity and builds self-awareness and confidence. Outdoor play creates opportunities for fitness and improved coordination, balance, agility, and obesity prevention.

Fine Motor – nature play spaces, especially in areas that include collecting nature materials for play, offer a variety of opportunities to build fine motor skills and hand-eye coordination. Examples can include building fairy houses, manipulating loose parts, weaving, and collecting nature items. This is also often seen in nature-based activities like leaf hunts, nature mandalas/arranging nature items into patterns, etc.

Cooperative Play and Individual Play

Cooperative play involves the division of efforts among children in order to reach a common goal. Some art-based activities can be cooperative, such as painting a mural or building a sandcastle. Children can work together to rake leaves, build a snow fort, or plant and tend to a garden. This allows children to learn how to navigate negotiating with others, build social skills (teamwork, sharing, taking turns, leadership), and critical thinking skills.

While cooperative play is most thought about, there is great value in allowing children time to themselves while outdoors. Individual play encourages reflection, mindfulness, metacognition, independence, self-regulation, and a sense of where they belong within the world. Individual play also offers opportunities for children to create their own worlds and make independent decisions about how they play and what they do during that time.

Unstructured Play

Unstructured play, such as fort building, also helps children learn about the world around them with no guidance or prescription by adults. This type of play allows children to have no fear of doing it wrong, since there is no correct method or outcome - no “right” way to use something. Unstructured play fosters critical thinking skills, decision making, and appropriate risk taking as children navigate creating their own rules.

Dramatic/Creative Play

Dramatic play, or pretend play, allows children to use their imaginations and think creatively. In nature play spaces, this is often seen in the context of huts, tunnels, nests, boats or other structures that allow children to use their imaginations and act out scenes. Dramatic play can be independent or cooperative.



Outdoor Classroom at Wooldridge Elementary Green School Park. Photo by City of Austin - Parks & Recreation Dept.

DEFINING THE SPACE

Quiet Spaces and Hiding Places

Quiet spaces and hiding places come in many forms: tunnels, the enclosed areas of a treehouse or structure, a temporary fort they build themselves, or access to quieter natural features like a creek. Children benefit from spaces where they can retreat from highly stimulating activity while still feeling connected to the social space. In this way, quiet spaces and hiding places can provide a calm, soothing environment while still sparking wonderment and discovery. For young children, well-designed hiding spaces will feel remote to the child while still maintaining visibility for the guardian/supervisor.

Community Gathering

Gathering spaces offer the opportunity to bring people together. Public nature play spaces often act as natural gathering spaces since they are areas in which parents typically bring their children; a feature that can be enhanced with intentional design. The informality and natural comfort of the space can

lead to a greater sense of community, seen frequently through community gardening, family celebrations, play groups, or neighborhood socials. For schools and childcare centers, these spaces provide safe areas to converse with parents or students.

Functional Services

The more creature comforts taken care of by the space can allow for extended play experiences. Access to water fountains and restrooms can be especially important for younger ages. If you do not have such features near your nature play space, this could impact how long families play in the space. Also consider if your site has existing waste receptacles, and if not, who could maintain these if they're installed. If there is not funding to manage waste receptacles, providing Leave No Trace messaging can be one way to encourage visitors to take their trash with them instead of leaving it on site.

Pathways

Pathways serve a wide variety of users and can be formal, hard surfaces for wheeled toys,

wheelchairs and walkers, or can be informal paths between activity settings allowing for transitions that are slower, exploratory, and windy. Paths for wheeled toys are best when they're looping and have varied topography to physically challenge little bodies and build up equilibrium and bilateral development. It's best if primary pathways are accessible and wide (at least 5 feet wide is a good baseline).

Wide, hard-surface paths provide accessibility and are appropriate as the primary thoroughfare through a play space. Narrower, soft-surface trails that meander through the area or connect to nearby natural area trails can lend a sense of exploration. Pathways should generally be sinuous and curvy, imitating the never-straight lines of nature. They can also be created with stepping stones, stone slabs, wood rounds of slightly varying heights, or concrete cast slabs with "fossil" impressions.

Active Play Features

These structures are most similar to typical modern playground structures in their intent but may differ in their materials and

appearance. There are unlimited options for such structures, but they should be made of natural materials (i.e., lumber, rope, rock, etc.) and allow for locomotor play activities, including balancing, swinging, climbing, or other physically challenging activities.

Examples of such structures:

- Log and rope climbing structures
- Nature-based play sculptures
- Structures that are built to imitate the activities of animals in the wild (e.g., a birds' nest)
- Stump jump
- Fort building
- Loose parts play

Seating and Gathering

Stumps and boulders act as great seating for a nature play space. These seating areas may double as a gathering area or outdoor classroom or as a natural barrier between activity areas. Learning spaces, such as an outdoor classroom, can provide areas to



Photo from Nappy.com.



Children exploring nature play space at Walnut Creek Metro Park. Photo by City of Austin - Parks & Recreation Dept.

have guided adult interaction for enrichment activities/lessons/experiences with the potential to learn through and about nature. Shade should also be incorporated into any seating and gathering area for both the comfort and safety of the users.

Storage and Fences

Keeping equipment and materials close to where they're used is key to enjoying and fully engaging your outdoor learning and play settings. Storage can be clever, hidden, and ample while not taking up valuable play space or being difficult to organize. One option is to scatter your storage spaces throughout the play space and make them multifunctional and attractive.

A play space will often need storage for loose parts, toys, equipment, etc. Consider incorporating other elements into the storage, such as a musical wall, an art mural, or a mirror. Also consider heights of adults and children when designing and building storage. Storage spaces can act as a message board, either for visitors or for participants. Ensure storage housing is all-weather and sheds water.

While fences can add security enclosure, they can be costly and not always necessary depending on the nature of the site. If a fence is present, consider incorporating playful elements into the use or design (i.e., music wall, weaving, etc.). For security and safety aspects, a fence will often be placed around the entire play space with only one entry/exit point.

NATURE PLAY MATERIALS

Large Stationary Logs

Large logs installed for climbing should be attached to concrete foundations to create a gap between ground surface and play feature both to stabilize the structure and to help prevent early decay from ants and other insects. The angle of climbable features should be a minimum of 30 degrees to help prevent unwanted standing/jumping.³⁸

Loose Parts and Building

If creating your own **tree cookies**, tree cookies should be sealed as soon as they are cut to help prevent splitting. The length of sticks for fort building should be at least six

feet to promote cooperative play and reduce unwanted behavior (i.e., sword fighting). Building materials (sticks, bamboo, palm fronds, etc.) can be left either untrimmed or trimmed, depending on the safety concerns or benefit they provide. For example, untrimmed materials are hooked together with greater ease than trimmed sticks often making fort building feel more realistic. When palm fronds dry, they naturally provide more coverage and won't have to be replaced as often as other materials for building.

Know you'll need to regularly replace loose parts and building materials depending on how heavily they're used by children, and plan for this when budgeting.

Water, Sand, and Earth

Water is both exciting and calming. Water play teaches cause and effect, balance, pressure, and helps develop early scientific concepts like volume, displacement, and motion. It encourages social skills like cooperation and sharing, and pumps build upper body strength and teach problem solving. Water play can be designed for a variety of ages with shallow

splash areas for older kids, or pond-less water troughs and tables that meet the needs of younger children.

When water play features are included, water conservation should be considered (such as using rainwater from a cistern or similar feature, if allowed). Water is often combined with earthen material like dirt or sand and can provide hours of entertainment for a wide range of ages. Small pools, puddles, and muddy areas, running water, and shallow catch-basins are all possibilities for nature play features. While there are considerable safety considerations, water is an extremely dynamic play feature, whether it is from an interactive play feature or if it is brought in specifically for programming. Digging, regardless of the material, is a universal activity for young children and is often one of the most popular areas in a nature play space. Dirt, sand, and mud can all be used and lend themselves to different types of play. It will help to designate specific digging areas within a nature play space to mitigate any unwanted digging that is likely to spill over from the designated area. Areas should be deep enough for children to



Child exploring ammonite during Earth Camp. Photo by City of Austin - Watershed Protection Dept.

dig (8-18 inches) and can be created either directly in the earth or within a deep container. This helps set boundaries for the play area and prevents material from spilling out over grass and asphalt, where it can cause slippery surfaces. Providing digging tools (shovels, buckets, scoops, sieves, trucks, etc.) will also help define the intent of the space, as well as the intuitive actions that will occur in the area.

For sand play, be sure to provide adequate drainage, which can typically be provided by having gravel beneath the sand area. Locate your sand play areas away from active play areas and provide enough room for many children to play without getting in each other's way. A 40 square foot space is a comfortable play area for groups of up to 10 children. Try designing the area so there are a variety of places and activities for children in small groups (one to four) or for playing alone.⁴⁷

Coarse grain sand is helpful in large areas since it wipes off the body easily. If you are more interested in building with sand (sandcastles, molded shapes, etc.) then a

finer grain, low-silica play sand can be more productive. Builders' sand is not suitable as it can contain irritants and cause stains. The sand will need to be topped up every one or two years and will need to be completely replaced every four or five years, though these frequencies depend on the nature of each individual site.⁴⁶

In a managed space, staff often place a cover over a sand play space to keep animals and debris out of the area overnight. Select a cover that is lightweight and easy to lift and contains a breathable mesh netting rather than a tarp that can get weighed down with water and dirt. Choose covers that let in water, air, and sunlight for the best overall health and cleanliness of the sand.⁴⁵ Ensure the cover can be tightly secured both when on and off the sandbox.

Earth play can include both stationary areas (digging in the garden, mud kitchen) as well as program-based activity areas (worm bin, compost area). If program-based activities are included, be sure to consider any maintenance issues that could arise in managing those types of activities (tools for compost

turning, keep worms in the shade and pest free, etc.).

Plants and Trees

Plants are a great addition to any outdoor play space. They provide another element for children to interact with, discover, and enjoy. While it's always important from a design aspect to pick plants that will integrate well with the space and enhance the aesthetics, it's more important to remember you are creating a space for children to run and play. You'll want to stick to plants that can take the rough activity little hands and feet provide by selecting vegetation that is low-maintenance and resilient. When considering which plants you want to bring into the space, ensure you either have irrigation or select plants that require no irrigation. Know you'll need to regularly replace some plants based on how much they're interacted with by children, and plan for this when budgeting.

Select plants that evoke the use of all senses, considering different textures, colors, smells, seed pods that can become

part of loose parts, etc. They are also great at allowing children to discover seasonal changes, such as watching leaves change color or observing when flowers bloom.

The **Best of Texas Plants database** is a great place to start when thinking about what species are appropriate for play. Select the purple handprint icon to bring up all plants that are child friendly. You'll also want to avoid using certain plants, such as:

- Invasive species
- Those that can cause injury or harm to individuals (i.e., irritant plants like stinging nettle or poison oak, or thorny plants like hawthorn or rose)
- Those that have inedible fruiting bodies or seeds that might be harmful if ingested (i.e., snowberry, Pacific yew, red elderberry, mountain laurel)

By densely planting areas with native plants, you'll also evoke a sense of "wild" nature within your space. Plants provide several ecosystem services such as attracting pollinators, providing homes and food sources for native

wildlife, improving air and water quality, carbon sequestration and increasing biodiversity. You'll have the added benefit of observing the nature that comes along with plants.

Plants can also be used to define areas of the site without separating them, to separate the play space itself from the rest of the park or to screen it from nearby roads or neighborhoods, or to create "secret," isolated areas where kids can play separately from others.

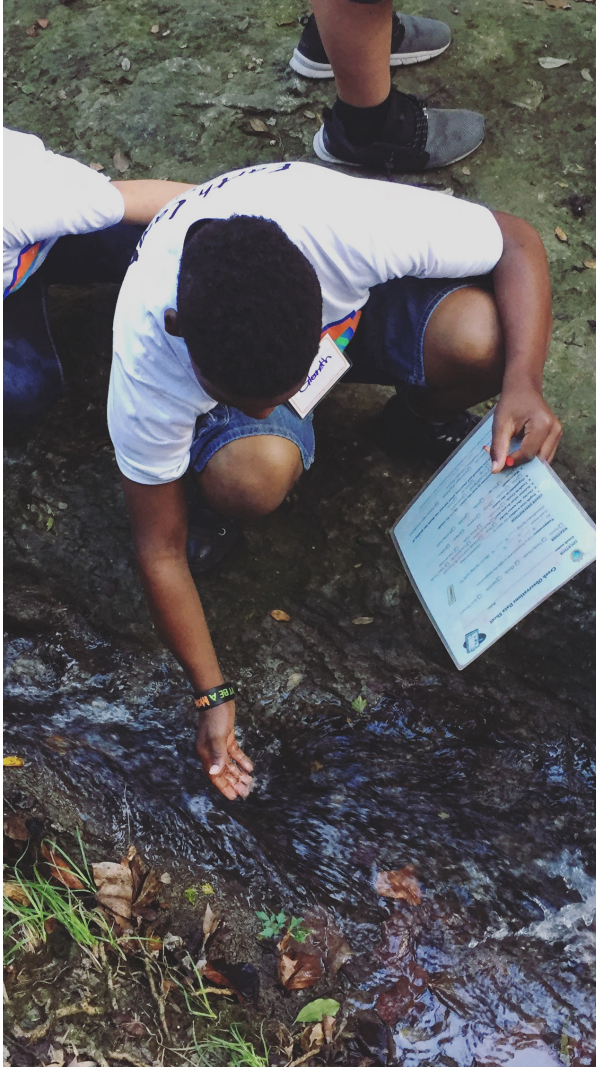
ADDITIONAL DESIGN CONSIDERATIONS

Accessibility

Special consideration should be given to providing accessible surfaces that meet the *ASTM Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment*, ASTM F1951. Nature play feature selection and location, including ramps into play spaces, and the type of surfacing in the play space all need to be considered. For public or commercial sites with project budgets exceeding \$50,000, you will be required to register your project



Fairy pavilion at Walnut Creek Metro Park. Photo by City of Austin - Parks & Recreation Dept.



Child exploring water at Blunn Creek Nature Preserve. Photo by City of Austin - Watershed Protection Dept.

with the Texas Department of Licensing and Registration and hire a Registered Accessibility Specialist.

Additional considerations in nature play spaces are often around raised beds or activity bins. The height of an accessible bed should be 24 inches for someone seated in a wheelchair, and 30 inches for an individual who will stand while gardening but has difficulty bending and reaching.³⁹

It should also be noted that physical challenges make up only a small proportion of children with disabilities.⁴⁰ Care should be taken to design spaces that meet the needs of all children, including those with sensory, cognitive, social/emotional, and communication challenges. This can be achieved by incorporating a variety of play pockets such as quiet spaces, sensory stimulating plants, music or art stations, or dramatic play elements.

Age Group

Children play differently depending on their age, so designing activity spaces that target certain age/mobility ranges can help provide

a positive experience for all. Activities that encourage play across the ages, such as fort building, can also be incorporated to build cooperation, creativity, and leadership skills.

In areas where access to the play space is unlimited or enforced only by signage, the designer should recognize that since child development is fluid, parents and caregivers may select a play space slightly above or slightly below their child's abilities, especially for children at or near a cut-off age (e.g., 2-years old and 5-years old). This could be for ease of supervising multiple children, misperceptions about the hazards a play space may pose to children of a different age, advanced development of a child, or other reasons.

Conflicting Activities

The play space should be organized into different sections to prevent injuries caused by conflicting activities and children running between activities. Active, physical activities should be separate from more passive or quiet activities. Areas for climbing structures and digging areas should be in different sections of the play space. Different types of

features have different use zones that must be maintained. Moving equipment, such as swings, should be located toward a corner, side, or edge of the play area while ensuring that the appropriate use zones around the equipment are maintained. Slide exits should be in an uncongested area of the play space. If tunnels are incorporated, the path over the tunnel should have a barrier to discourage a child jumping off the top and accidentally landing on a child exiting the tunnel.

Sight Lines

Nature play spaces should provide visibility for supervisors while still allowing for perceived hiding spaces for children. Mazes, tall grasses, or huts all allow for a child to feel like they're hidden while still allowing an adult to observe their play.

In play spaces with areas designated for different ages, the older children's area should be visible from the younger children's area to ensure that caregivers of multiple children can see older children while they are engaged in interactive play with younger ones.

Signage

Although the intended user group should be obvious from the design and scale of the features, signs and/or labels posted in the play space should give some guidance to supervisors as to the age appropriateness of the area. See additional information in the [Signage](#) section.

Supervision

Designers should be aware of the type and level of supervision most appropriate for their given nature play space. Parents and supervisors should be aware that not all features are appropriate for all children who may use the play space. Supervisors should look for posted signs indicating the appropriate age of the users and direct children to features appropriate for their age. Toddlers and preschool-age children require more attentive supervision than older children; however, one should not rely on supervision alone to prevent injuries.



Photo from Nappy.com.

04 FUNDING



FUNDING

Seeking funding can be an intimidating prospect, but thankfully there are many organizations who already recognize the benefits of a nature play space. Applying for grants takes time and energy, but they provide valuable funding to create a space that you may not otherwise be able to build. Before getting started, plan and understand the full cost of the project, and develop the case for support—be able to communicate exactly how this nature play space will benefit the surrounding community. Also, take time to think creatively about sources of funding; grants can provide large, impactful gifts, but donations of materials and labor can save major costs, and even soliciting small gifts from individuals can create a sense of dedication from the community.

Photo (opposite): Child playing along Lady Bird Lake. Photo (top) Bluebonnets. Photos by City of Austin - Parks & Recreation Dept.



SOURCES OF FUNDING

APPLYING FOR GRANTS

For each grant, customize the application. Grant opportunities are often very specific, and the more tailored the case for support is to the grant being sought, the more the project will seem like a good prospect for funding. Be detailed in explaining exactly how funds will be used to create or activate the space and explain exactly how the space will benefit the community.

Be creative when researching sources of funding—nature play spaces benefit the community in a variety of ways, and grants supporting inclusion and access, education, health and fitness, and environmental impact might all be applicable.

If you are struggling to gain access to a grant application, or don't feel you have a strong enough case for support to qualify, consider partnering with an organization whose constituency would benefit from a nature play space. They may have more fundraising resources and access to different funding sources. Partnerships can also be leveraged to provide marketing and visibility or volunteer resources once the space is completed. However, this should only be explored if a partnership is appropriate and would be mutually beneficial to both parties beyond the prospect of funding opportunities.

Once the space is built, consider funding to support ongoing maintenance and activation. Some funders may be more interested in programmatic support, and



Photo from *Nappy.com*.

a focus on the activation of the space and the benefit to the community may open additional grant opportunities.

ADDITIONAL POTENTIAL SOURCES OF FUNDING

In Kind

Seek donation opportunities in the forms of goods and services in addition to cash grants. Companies may be willing to donate supplies and/or labor in-kind or at a substantial discount. This can be extremely helpful for materials procurement, site preparation, installation, marketing and maintenance.

Corporate and Non-profit Volunteer Networks

An often-overlooked path to funding can be found in an existing volunteer network. Corporate groups can be a great source of funding outside of grants, but many prefer to support the efforts of their employees and will only donate to groups with which their employees are already actively engaged. Working with non-profit partners can connect community groups with corporate

volunteers that work in their neighborhood. Connecting with non-profit organizations like Austin Parks Foundation, Keep Austin Beautiful, United Way, and others that mobilize a large network of corporate volunteers are a good place to start.

Community Connections

Reach out to the community who will most often be using the space, if appropriate for the audience. Parents in a school, residents in a neighborhood, or educational/childcare groups may be interested in donating funds to support a space they'll frequent. Other examples include:

- In kind donations of design or landscaping services from neighborhood connections.
- School PTAs often have access to mini-grants or may use general funds for projects at school sites.
- Soliciting neighboring businesses who wish to demonstrate their community impact.

Post-installation considerations

The budget available for nature play sites varies considerably, depending on the size and scope of the project. Most often the focus is on initial development, as a necessary first phase of a larger project.

Once the site opens and nature play begins there is often a need to make a few post-installation adjustments. This can range from a need for additional safety or instructional signs, replacing plants that have been overly engaged with, or a need for supplemental materials based on usage patterns.

Making changes or additions post-installation is the most expensive and difficult time to do so, but is not uncommon. As such, it is best to have a contingency plan in place. Traditionally, evaluation models recommend holding 10% of the budget for changes or additions needed after opening. If it is not possible to hold 10%, work with the planning team to determine how any needed changes might be handled and from where the funds will be available. If the project has a construction budget, there may be contingency funds built into

the budget that can be used for post-installation changes. In some projects a feature may change or be pulled during the later stages of planning, and the funds for these features may be reserved for changes or modifications needed after opening.

For larger scale projects that involve fundraising, designers have noted that new donors often emerge after a site opens. Some people need to see the site “in action” in order to understand its meaning and importance, and are then inspired to add a contribution once they do so. While no one should count on this, managers who are doing fundraising may want to include a round of post-opening tours and visits to showcase the site, celebrate what is working well with donors, and point out remaining or additional needs to establish the project as an ongoing donor opportunity.

CITY FUNDING RESOURCES

- **Bright Green Futures Grant** - provides funding for school-based sustainability projects up to \$3,000.
- **Urban Forest Grant** - funds stewardship activities like tree planting, tree care, education, and disease control projects.
- **Wood Reclamation Day** - on the first Friday of the month, the public is welcome to take home large logs out at John Trevino Jr. Metro Park. Community members are responsible for all loading and hauling of wood, and parks staff can cut logs down to size if needed. Check the [City of Austin website](#) for details.
- **Neighborhood Partnering Program** - the City helps local groups fund, develop, and construct their small to medium-sized projects on City-owned property. In turn, local groups help with “cost-sharing” and project maintenance.
- **Austin Water Rebates** - Customers of Austin Water or a qualifying water provider can receive rebates and incentives by taking steps to conserve water.



Photo by Texas Parks & Wildlife Dept. Photo (opposite): Logs harvested during trail clearing at Walnut Creek Metro Park. Photo by City of Austin - Parks & Recreation Dept.

COMMUNITY PARTNER FUNDING RESOURCES

- **Austin Parks Foundation** - offers varying levels of grant funding aimed at supporting large, community-initiated, physical park improvement projects, as well as master plan implementations and place-making.
- **Texas Parks & Wildlife CO-OP Grant** - provides funding to tax-exempt organizations for programming that engages under-served populations in TPWD mission-oriented outdoor recreation, conservation and environmental education activities.
- **Austin Community Foundation Community Grants Program** - year-round grant opportunity for local nonprofits working in eight impact areas.
- **St. David's Foundation** - a variety of grants aimed at targeting specific health challenges.

05 PROCUREMENT & SOURCING



PROCUREMENT & SOURCING

Design of nature play spaces depends heavily on the availability of natural resources, and designers will have to find materials and design with what they have local access to. This process is more iterative than traditional playscape design and may more closely resemble a design-build model, where the designer will work with the contractor to select and fit pieces on site to meet the project's design intent.

Mulch pile for It's My Park Day at Barrington Elementary Green School Park. Photo by City of Austin - Parks & Recreation Dept.



MATERIALS

LOGS

Logs will ideally be created from native hardwood and decay-resistant species, such as oak, pecan, eastern red cedar and juniper. Softer woods can be used, but they will decay more quickly, and will be prone to cracking and splintering more easily. Bark may be left on, but it is advised that log cuts have chamfered edges (create a uniform 45 degree angle cut all the way around the main cut) that can be sanded to alleviate sharp edges and sealed with a natural wood sealer, such as Soy Seal or similar. Protrusions where small branches attach to the main log can also be cut flush, sanded and sealed.

BRANCHES, BAMBOO POLES

Smaller tree branches for fort-building can be created from almost any species of tree, including invasive species. Branches should have smaller twigs removed. Similarly, bamboo poles can be harvested, and the leafy branches removed for fort-building. Tree branches and bamboo poles will decay fairly quickly and will need to be replaced regularly.

BLOCKS

Blocks for building can be made in various sizes and shapes from dimensional lumber or natural wood pieces. Sharp edges can be smoothed with a sander, and the blocks can be sealed with a natural sealer to increase their longevity. Blocks can decay and leave the site more quickly than bigger wood

pieces, and quantities should be regularly checked and replaced as needed.

STONE

Stone can be used for seating, climbing, and built objects. Limestone block is typically a rectangular quarried rock and can have some cut (smooth) faces and some natural (rough) faces. They are good for seating and more formal design elements. Limestone boulders are uncut, with natural, rounded edges good for climbing and naturalistic designs.

PROCUREMENT

WOOD—WITHIN THE CITY OF AUSTIN DEPARTMENTS

The City of Austin manages a large amount of land throughout the city, with various city departments responsible for urban forestry management. The Parks and Recreation Department's Urban Forestry unit can set aside logs generated from their

management activities if provided with the desired specifications (length, diameter).

City departments also manage the urban forest through a shared contract for tree removal. Contractors can be enlisted to provide the wood from scheduled tree removals for nature play projects. The process is initiated by the sponsoring City department. When the department single point of contact (SPOC) judges that a tree marked for removal meets the nature play preferred standards for materials, they contact the PARD nature play representative to review the tree, write a scope for removal and delivery, and coordinate with departmental purchasing staff.

WOOD—OUTSIDE THE CITY OF AUSTIN DEPARTMENTS

For non-City projects, materials can be sourced both for a fee and free of charge. Parent groups, PTAs, buy-nothing groups, Next Door, and trees that fall at people's personal homes are all great places to start for

small-scale projects (stump jumps, natural building materials, etc.).

The key to procuring logs is to be creative, be ready to transport, and to have storage available. While the logs can be placed outside while the project is underway, you'll need to make sure the storage area is not going to interfere with the work being done, and is a large enough space that you can move the logs around while you're building. The log that is needed next isn't always going to be the one on the top of the pile. If you are thinking of moving logs yourself, you will also need to plan carefully. This often requires more substantive, specialized transport.

The **PARD wood reclamation day** offers the public a monthly opportunity to pick up larger pieces of reclaimed wood. Community members must sign on-site liability waivers and are responsible for all loading and hauling of wood, though park staff can cut logs down to size as needed.

Another source for logs is local companies that handle woody debris. There are



*It's My Park Day at Barrington Elementary Green School Park.
Photo by City of Austin - Parks & Recreation Dept.*

several businesses in Austin and the surrounding areas that receive brush and turn it into mulch for future use. It can be worth calling to see if they could be on the lookout, or allow you to come by to watch for brush that comes in so that you can select what would work best for your project. For mulch, **ChipDrop** finds local tree companies working in your area and notifies them that you would like some wood chips or logs (or both). The next time their truck is full they can pull up your information and deliver the wood chips straight to your driveway.

STONE, GRAVEL, AND SURFACING MATERIALS

Stone may be harvested from the site, brought in from a nearby construction site where it is a waste material, or purchased from a supplier or quarry. Central Texas quarries primarily sell local limestone in colors ranging from white to grey to reddish-yellow and are a good choice if your project requires a large amount of stone. These limestones will have varying hardnesses and weathering characteristics. If your design requires specific standards, check

with your stone supplier or quarry to ensure the stone you specify will meet them.

For larger or more complex installations, contractors may be able to provide better pricing than if you source the items yourself. If you are working with a contractor, they should be able to provide you with pricing options for each of the materials associated with your project. Local landscape suppliers can also help in sourcing materials for your nature play space. While many will not carry everything you will need, they will be your best option for items like soils, ground covers such as gravel or mulch, and any other rock you may need for retaining walls or pavers.

PLANTS AND SOD

If your project includes new plantings, local nurseries can assist you with sourcing these. Designers should use only native or adaptive plants that are accustomed to heat and drought. Native species are also generally hardy enough to tolerate being played on and/or around. Source plants about a week before you want them at site for installation to

ensure the species you want are available. If your project site does not have water, you'll need to ensure you have a plan for procuring that as well. Water will be needed at all stages of the installation, not just once plants arrive. If the site does not have water easily accessible, and an irrigation system is not going to be installed, you'll want to make sure you have a water tank available at site that will be regularly filled until plants become established. Depending on the season they are planted, sod establishment typically takes three to six months, perennials are established after roughly one year, and trees require three years of supplemental water to get established.

VETTING PROCESS FOR CONTRACTORS AND DESIGNERS

If you're electing to use outside resources to help with the design, and possibly the installation of the project, the key is to work with someone who understands your goals and who you feel comfortable working

with. The process is a long one and you'll want to make sure you're ready to spend several hours with this person, or team in some cases. While there are several factors to consider when choosing whom you'll be working with, the most important is that you make a good team.

If assistance is needed with the plan, you'll want to start with a landscape designer or even a landscape architect, and you'll want to start by making sure the designer has experience in designing nature play spaces. Start by looking in your area for landscape designers or architects that have been certified in Designing Early Childhood Outdoor Environments as they will have studied and mastered the information that is most important when designing nature playgrounds. While experience is important, the working relationship is going to be key. Interviewing a couple of designers and architects to make sure that you find one that works best with you is the most important. The designer or architect you feel best about working with may have less experience than others but

may speak to your beliefs and understand your desired goals with the project better.

When you start to interview the designers and architects, ask if they have the means to also install the project for you, or can offer their services to oversee the installation of the project. You may want to consider the ease of a company that designs and installs so that you can work with one team from design to installation. If the designer does not have the means to install the work themselves, they may have a few teams of contractors or installers they work with on a regular basis to refer you to. Ask to speak to these teams before making any decisions so you can see if they'll also be a group you'll want to work with.

When you're interviewing, you'll also want to ask for references so that you can talk to past clients and see what a long-term working relationship is like with the designer and their team. You may want to ask the contractors and the references you're provided with some **questions**.

06 SAFETY



SAFETY

Traditional playground safety guidelines (ASTM, Childcare Regulation, and National Guidelines) should be referenced in the design of safe natural play spaces. Since nature play encompasses features that are generally outside of traditional regulations, additional safety information on features specifically found in nature play spaces is addressed below.

Photo (opposite): Family Adventure Garden at the San Antonio Botanical Garden. Photo (top) Father helping child onto balance log at the Western North Carolina Nature Center. Photos by City of Austin - Parks & Recreation Dept.



RISK VS. HAZARD

A child deserves the opportunity to take risks in an outdoor environment. Risky play is defined as thrilling and exciting forms of play that involve a risk of physical injury, such as jumping from a tall height.³¹ A hazard, on the other hand, is something that children cannot assess for themselves and that has no clear benefit, such as stepping on a piece of glass or getting snagged on a bolt.³¹ Detailed definitions and examples of each type of risky play are provided in Table 1.³² A nature play space is a tool to teach risk assessment and reward while minimizing the risk of catastrophic injury. According to the Canadian Pediatric Society, studies show that catastrophic injuries happen more frequently on a traditional plastic and steel playground than a natural playground.³⁴

Children benefit greatly from engaging in risky play that may result in learning injuries (bumps, bruises, splinters, scrapes).³⁴ The life skills acquired from learning injuries in a play-space translate to higher resiliency and better decision making when they grow up and venture out of the playspace.³⁴

While standards serve an important role in ensuring the reduction of hazards resulting in serious injuries in nature play spaces, they should not be enforced in a way that tries to curtail risky play in general. Safety evaluations are one way to help determine the difference between the two, reducing hazards while encouraging developmentally beneficial risk taking. A risk assessment template can be found in the [Appendix](#).

Table 1. Definitions used to guide the systematic review (risky play behaviours).

Risky Play Thrilling and exciting forms of play that involve a risk of physical injury. The risk can be real or perceived [7,14]		
Risky Play Categories [5,6]	Definition	Examples
<i>Great heights</i>	Danger of injury from falling	Climbing/jumping from surfaces, balancing/playing on high objects (e.g., playground equipment), hanging/swinging at great heights
<i>High speed</i>	Uncontrolled speed and pace that can lead to collision with something (or someone)	Swinging at high speed
<i>Dangerous tools</i>	Can lead to injuries and wounds	Cutting tools (e.g., knives, saws, or axes), strangling tools (e.g., ropes)
<i>Dangerous elements</i>	Where children can fall into or from something	Cliffs, water, fire pits, trees
<i>Rough and Tumble Play</i>	Where children can be harmed	Wrestling or play fighting with other children or parents
<i>Disappear/get lost</i>	Where children can disappear from the supervision of adults or get lost alone	Exploring alone, playing alone in unfamiliar environments, general independent mobility, or unsupervised play

REGULATIONS FOR NATURAL PLAY SPACES VERSUS TRADITIONAL PLAYGROUNDS

There are two main handbooks for traditional public playground safety (“CPSC Public Playground Safety Handbook” and the “ASTM F1487 Standards”), both of which are focused on manufactured equipment. Additional resources for safety guidelines in Texas include Minimum

Standards for Childcare Centers and The Regulatory Framework for Outdoor Learning Environments in Texas Childcare Facilities.

Some guidelines from existing resources for play structures can be applied to natural play spaces in order to provide consistency and set measurable minimum standards. While nature play spaces do not have regulations in the same way that traditional playscapes do, best practices are to follow those guidelines as it relates to safety,

keeping in mind the intent of the feature. Other elements in nature play spaces may fall under the description of “furniture” or “natural features” and fall outside the minimum standards set by equipment and structures guidelines. For example, natural seating may also be used for play but since the main intent is seating, not play, it does not require the same regulations. When referring to traditional playground safety standards, the primary safety concerns will likely be entrapments and use

zones. Whether ASTM standards apply or not, other directives may still be applicable, including floodplain requirements or accessibility standards, and the design team needs to be cognizant of overlapping regulation fields.

When considering safety standards and deciphering which standards should be applied, designers should understand the following:³⁴

- Nature play often falls into the gray zones of the standard, or can be subject to varying interpretations from inspectors. Actively partnering with safety and maintenance professionals will create the safest and most playful environment.³⁴
- “Intended use” is an important tenet of the standard.³⁴ Understanding and communicating the intended use of each feature will help make the case for allowing maximum play value (such as a bench also serving as a balancing log).
- Natural landscape features, furniture, public art, and loose parts are not

regulated by ASTM Playground Standards unless they encroach into the use zone of an introduced play structure with a fall height.³⁴

- The application of these standards is subject to the opinion of your certified playground safety inspector, should this be required by your facility/ organization.³⁴ Consult with them early in the process and see where they stand on natural features.

SAFETY CONSIDERATIONS FOR NATURE PLAY SPACES

GROUND PLANE MATERIALS

While a fall could occur while playing on any type of features, such as a balance log or stump jump, only installed features intended for climbing will trigger the need for protective surfacing. For those features, protective surfacing material is one of the most important factors in reducing the likelihood of life threatening head injuries. A fall

from a critical height onto a shock absorbing surface is less likely to cause a serious head injury than a fall onto a hard surface.

FALL HEIGHT: The vertical distance between the highest designated play surface on a piece of equipment and the protective surfacing beneath it.

USE ZONE: The surface under and around a piece of equipment onto which a child falling from or exiting from the equipment would be expected to land. These areas are also designated for unrestricted circulation around the equipment.

Use Zone Specifics:

- While several types of surfacing are allowed, it is recommended that use zones contain engineered wood fiber tested to ASTM F1292.
- The use zone should extend a minimum of 6 feet in all directions from the perimeter of an individual climbable feature, and have a maintained depth of 6 inches when compressed.



Sand play during community engagement event at MLK Station Neighborhood Park. Photo by City of Austin - Parks & Recreation Dept.

- The use zones of two stationary features that are positioned adjacent to one another may overlap if the adjacent designated play surfaces of each structure are no more than 30 inches above the protective surface and the equipment is at least 6 feet apart.
- If adjacent designated play surfaces on either feature exceed a height of 30 inches, the minimum distance between the structures should be 9 feet.
- Use zones should be free of obstacles.

SAND PLAY

In a managed area, visually check a sand area daily before intended use. Sand should be raked regularly (e.g., daily or weekly) to ensure unwanted materials are properly disposed of. Unwanted holes should also be filled as they are noticed (refer to O&M checklist for further details). If sand has migrated out of the play space and onto a surrounding non-porous surface, it should be swept back in to prevent slips and falls.

EARTH PLAY

Research has shown that dirt contains microscopic bacteria called *Mycobacterium vaccae* which stimulates the immune system and increases the levels of serotonin in our brains, an endorphin that soothes, calms, and helps us to relax. Scientists say regular exposure to the bacteria may help reduce a child's vulnerability to depression. Exposure to dirt and the germs also works to prime a child's immune system to prevent allergies.⁴⁸

In urban or redevelopment areas, existing site soil can be tested prior to creating a nature play space to ensure it has not been contaminated with heavy metals or other harmful contaminants. In the City of Austin designers can contact the **Soil Kitchen** for more information on soil testing. If purchasing soil, read the label carefully to make sure there are no hazardous chemicals or fertilizers included in the mixture. This can most often be a concern with creating garden beds, as natural earth play usually only involves the dirt found on site. Care should also be taken during activity-based earth play (worm bin, compost

turning, etc.) where there is an increased risk interacting with unwanted materials. Similar to sand areas, unwanted holes should be filled as they are noticed (refer to O&M checklist for further details).

TREE PIECES

- Sharp points - be sure there are no sharp places on logs from where branches were broken off.
- Tops of logs - can have a beveled edge option if concerned about sharp edges; beveling can also prolong the life of a log.
- Decay - will happen with all pieces over time. Pieces that are connected with metal or other sharp connectors should be checked regularly for decay at the connection points to prevent injury.
- Trips/Falls - consider traffic flow when placing low branches and logs.
- Entrapment - the crotch of a tree (angle of connection for branches on a tree) can present an entrapment hazard

if the distance between any interior opposing surface is less than 3.5 inches and greater than 9 inches. If using a large log with these branches, ensure the angle is wide enough or remove the branches entirely. For secured stump jumps, distance between stumps must also be less than 3.5 inches and greater than 9 inches.

- Anchoring devices (concrete footings climbers) - should be installed below ground level and beneath the base of the protective surfacing material.
- Balance beams should be no higher than:
 - Toddlers: not recommended,
 - Preschool-age: 12 inches,
 - School-age: 16 inches.

ROCKS/BOULDERS

- Fall potential - general rule of thumb is if you can climb up without assistance, you can climb down/jump off without assistance. Since rocks and boulders

are typically classified as either seating or landscape features, they do not require a use zone and associated protective surfacing material.

- Head and neck entrapment - distance between boulders must be less than 3.5 inches or greater than 9 inches.

LOOSE PARTS

- Sharp points - if this becomes a concern, filing or sanding down any sharp points on sticks, bamboo poles, and other related items can help mitigate possible injury.
- Decay - will happen with all pieces over time. Pieces that are connected with metal or other sharp connectors should be checked regularly for decay at the connection points to prevent injury.
- Trips/Falls - consider including a storage bin to house loose parts or have staff reset a space after it's used to help mitigate possible trips and falls.

- Normal use and possible injury - as children use loose parts, they could unintentionally injure another child (ex. If a child is building a fort, moves a long stick, and accidentally hits another child during that construction). Should mitigation of accidental injury be necessary, it will need to occur via management of the space (i.e., parents, teachers, etc.).
- Kids throwing items/misused items - general use of loose parts could elicit unwanted behavior, such as throwing items, intentional breaking of items, sword play, etc. Mitigation of unwanted behavior will need to occur via management of the space (i.e., parents, teachers, etc.).

MOVING PARTS

- Ropes/Nets (balance between boulders) - ropes should not be able to be looped back on themselves or other ropes, cables, or chains to create a circle with a 5 inch or greater perimeter.

- Tire Swing - as tires wear down, steel can start to poke through the rubber. If steel-belted radials are used, they should be closely examined regularly to ensure there are no exposed steel belts/wires.

USED TIRES

- As tires wear down, steel can start to poke through the rubber. Steel-belted radials should be closely examined regularly to ensure that there are no exposed steel belts/wires.
- Care should be taken so that the tire does not collect water, unwanted insects, or debris; for example, providing drainage holes on the underside of the tire would reduce water collection.
- Secure tire climbing structures at both ends with anchoring devices and join each tire with flexible rope or cables that will not cause friction or wear. Ensure the tires cannot swing together and pinch fingers or hands.

EMBANKMENT SLIDES

- Embankment Erosion - be mindful of what surface material is used on either side of an embankment slide. As children climb up and down, the material will gradually wear away and could create a hazard by increasing the height of the underlying ground surface.

WATER

- Drowning - children can drown in as little as two inches of water.³⁶
- Pooling - mosquitoes are a common problem in Central Texas and care should be taken to mitigate the collection of mosquitoes. Any spaces designed to temporarily hold water, such as a rain garden, must have the water dissipate within 48hrs of collection. For features that are designed to permanently hold water, such as a pond, Western mosquitofish (*Gambusia affinis*) or other efforts should be added. Anywhere water

could unintentionally pool, such as tires or loose parts, should be regularly emptied.

- Cisterns/rain barrels - when non-potable water is part of the design, check local regulations for contact requirements (ex. if water can be used to water a vegetable garden bed).

TREES

- Climbing - the decision to allow tree climbing should be made by management (i.e., teachers, principal, parents, etc.). Similar to rocks and boulders, the general rule of thumb is if you can climb up without assistance, you can climb down/jump off without assistance. Since trees are typically classified landscape features, they do not require a use zone and associate protective surfacing material.
- Unsafe branches/limbs - ensure low-hanging branches are not over play features or in paths. Prune dead branches near play spaces to avoid risk

of falling limbs. Be sure to check with City code on what is allowed by non-city staff for tree maintenance.

PLANTS

- Avoid adding plants that can cause injury or harm to individuals (i.e., thorny plants like hawthorn or prickly pear cactus) and regularly check the play area for native plants that may cause irritation or injury (i.e., stinging nettle or poison ivy).
- Avoid adding plants that have inedible fruiting bodies or seeds that might be harmful if ingested (i.e., snowberry, Pacific yew, red elderberry, mountain laurel). If native poisonous plants are naturally occurring on your site, parents, teachers, etc. should be aware of how children are interacting with those plants.
- Place plants so there are sight lines into the nature play space.



Wildflowers. Photo by City of Austin - Parks & Recreation Dept.



Skull used during programming from Earth Native Wilderness School at Walnut Creek Metro Park. Photo (opposite): Voting on nature play features during community engagement event at MLK Station Neighborhood Park. Photos by City of Austin - Parks & Recreation Dept.

SHARING SPACE WITH WILDLIFE

- Bees/Wasps - The addition of pollinator plants could attract bees and other insects. Nature play structures can also provide an ideal home for these insects. Regular checks for stinging insects should be a part of the maintenance checklist.
- Fire Ants - Decaying wood, irrigation boxes or similar structures, and wood mulch can all be inviting to fire ants. Regular checks for ant mounds should be a part of the maintenance checklist. If you choose to remove the ants, choose natural methods such as boiling water or treatments that are toxic only to ants.
- Snakes and Scorpions - Loose parts, when left in the same space for an extended period of time, can invite certain pests; loose parts storage units can also provide a similar home. Moving loose parts regularly, including disassembling forts, can help prevent pests from making a home in that space.

CLIMATE/INCLEMENT WEATHER

- Heat Exhaustion – when working in warm climates, be sure to set up play in shaded areas with easy access to water refill stations and cooler areas to rest if children become over-heated.

07 SIGNAGE



TYPES OF SIGNAGE

There are several categories of signage that can be present in Nature Play areas, including interpretive, wayfinding, safety, and temporary signage. While each of these sign categories support the overall visitor experience, the only signage that is imperative at nature play sites is safety signage.

Community engagement signage at MLK Station Neighborhood Park. Photo by City of Austin - Parks & Recreation Dept.



SAFETY SIGNAGE

Safety signs promote positive interactions in a Nature Play Area, while communicating the inherent risk involved in all types of play.

Things to consider when creating Safety Signage:

- Introduce the Nature Play Area in an inviting way, for example: Welcome to the _____ Nature Play Area!
- Communicate an assumption of risk, for example: Have fun and play safe! Be aware that all play has inherent risk. (or "Play at your own risk")
- Use clear and simple words on signs - try to stay at an 8th grade reading level.
- Communicate supervisory recommendations, for example: This area is not monitored. Adults are responsible for supervising children in their care while in the Nature Play Area.
- Communicate any rules that must be followed, for example: Park rules extend to the Nature Play Area; No glass bottles; Dogs must be on leash; etc.
- Share times that the area is open, if applicable.
- Icons are welcoming and helpful when a sign is not offered in a person's native language.
- While it's important to communicate rules and risk, use language that's encouraging, rather than focusing only on the "Don'ts".

- Safety messaging can also be incorporated into interpretive signs and vice versa.

WAYFINDING SIGNAGE

Wayfinding signage serves to orient the visitor and defines the boundaries of the nature play space while supporting a positive and safe experience as visitors navigate through the area. While we want to encourage self-exploration and curiosity within our nature play spaces, wayfinding signage is needed to provide structure and safety, allowing visitors (and first responders) to effectively move through a space.

Things to consider when creating Wayfinding Signage:

- Identify the space and the associated resources and activities available.
- Wayfinding signage should carry a uniform look that is easily identifiable.
- The way we identify the resources and activities throughout the designated Nature Play Area can promote

appropriate interactions (i.e., Jumping Rocks vs. Building Rocks).

- If the entire site is not viewable at one time, consider including a sign with a map of the site near entrances and throughout the space.

INTERPRETIVE SIGNAGE

Interpretive signage is intended to inspire the audience to engage in nature play, using images and icons to connect the visitor to the environment and nature play activities. Interpretive signage should provoke the audience to connect with nature, encourage conservation, and envision themselves as a part of the natural world.

Things to consider when creating Interpretive Signage:

- Interpretive signs should encourage curiosity, exploration and discovery in an unstructured learning environment.
- Interpretative signs can be included as a “jumping off point” for self directed play and interaction.



*Nature Exploration Area sign from CCCN San Francisco.
Photo by City of Austin - Parks & Recreation Dept.*

Here are some places where you can learn more about interpretation:

- National Association for Interpretation
- National Parks Service Common Learning Portal
- Eppley Institute

- Language should be tailored to the user and be simple, clear and thematic. Move away from explanatory language to language that invites imagination and personal investigation. See **Best Practices for Signage** on language and accessibility for more detail.

TEMPORARY SIGNAGE

Temporary signage can communicate specific events or changes in services to your nature play area (such as broken equipment). We also acknowledge that nature play may not always be a permanent installation within your site. Temporary signage will encompass the other forms of signage when this is the case. Timelines for temporary signage should be determined based on circumstances and scope.

Things to consider when creating Temporary Signage:

- As with all signage in nature play, using natural materials in temporary signage design can support further connection to place.

- With temporary signage, it is important to utilize the principles and practices of **Leave No Trace**.
- Temporary signage is not a substitution for permanent signage.

BEST PRACTICES FOR SIGNAGE

Nature Play signage will be most successful when considered early in the overall Nature Play Space development process. Signage should compliment the design of the nature play site while reflecting the community being served by considering the users' ages, abilities, language, and cultural norms. A standardized approach to sign production can reduce confusion and aid a positive experience within the site while reducing costs.

Scalability

- While signage is important for communicating intended use, ensure the number of signs doesn't overwhelm visitors. The focus of the area should remain on play and the natural world. Too many signs can make safe

practices and intended use hard to understand.

- Sign production costs vary greatly depending on the materials. Consider what works best for your budget, location, and audience.



Signage fatigue. Photo by Lalit Gupta on [Unsplash](#).

Materials

- As much as possible, materials used for signage should reflect the natural environment surrounding the nature play area. This holds particularly true for interpretive signage. Use natural materials that connect to other elements of the site.
- Corners on freestanding signs, sign posts, and other things that visitors could accidentally bump into should be rounded and without sharp edges.
- Durability, long-term maintenance of signs (such as graffiti abatement), replacement timing and associated costs, should also be considered and incorporated in planning.

Placement

- All freestanding signs should be placed with at least 6-foot clearance from nature play elements.
- Safety signs should be placed at entrances to the nature play area. They should be present adjacent to spaces

and activities that present potential hazards.

- Interpretive signs should not interfere with the activity. They should be placed at a height and orientation that is accessible to the intended audience.
- When deciding placement, remember to be inclusive of all users of nature play spaces.

Accessibility

- Ensure signs are appropriate for users. Consider the unique needs of users, including age, ability, language, and cultural background.
- Consider including non-text-based signs with graphics or universal symbols. Signs with simple text or even single words can be used to encourage play or suggest activity. This can provide added assistance for young children and other non-readers and can bridge other accessibility constraints.
- When choosing photos, ensure they represent the communities served. Photos of a diverse group of people

Walnut Creek Nature Play

This is an adventurous and unsupervised play area.

Stay safe—natural elements such as logs, sticks, boulders, and water have inherent risks.

Leave all materials in the play area.

Take only pictures, leave only footprints.

Creations built in this space may be different when you return.

CitiesConnecting
Children+Nature



Walnut Creek Nature Play

Este es un aventurero y área de juego sin supervisión.

Mantente seguro. Natural elementos como registros, palos, cantos rodados y el agua tiene riesgos inherentes.

Deja todos los materiales en el área de juego.

Toma solo fotos dejar solo huellas.

Creaciones construidas en este espacio puede ser diferente cuando regreses.

CitiesConnecting
Children+Nature



Helpful Resources for accessible design:

- **2012 ADA White Paper, Society for Experiential Graphic Design**
- **Creating Accessible Print Materials, Vera Institute of Justice**

engaging in intended activities can demonstrate appropriate use across language barriers. Such photos can also encourage participation from diverse communities.

- Organize information hierarchically. Use headers and lead with important information.
- Use left justification, when possible, to make information easier to read.
- Sans-serif fonts are preferred, as they are easier to read for most. Avoid ornamental fonts.
- Limit the amount of text that is all capitalized.
- Text should be set against a background with high contrast. Use light text on a dark background or vice versa.
- Some white backgrounds can create glare and may want to be avoided or carefully placed to mitigate sun exposure.
- Use discretion when deciding text size. Ensure that adequate space is given

between characters, words, lines, and paragraphs.

- Text should never be stretched or skewed to fit a space.

Language Access

- Ensure signs are present in all languages appropriate to the audiences you serve.
- Use short sentences and paragraphs. Aim to have all content at or below an 8th grade reading level.

(The Hemingway app or Grammarly can help you to do so.)

Questions to Ask While Planning Signage at Your Site

- Is the signage we are designing appropriate for the intended use of the site?
- Is the signage we are designing appropriate for and inclusive of the communities we anticipate visiting our nature play area?

Accessible Type by Probable Viewing Distance		
Probable Viewing Distance	Interpretive Exhibits Minimum Type Size (Helvetica Regular)	
	X-height (inches)	Type size (point)
Less than 3 inches	3/16	24
39 inches	3/8	48
78 inches	3/4	100
118 inches	1 and 1/8	148

Courtesy of Parks Canada

- Have we included an appropriate number of safety signs that communicate rules and risk?
- Does our signage help answer the following questions?
 - What do we want the audience to know and learn?
 - What do we want the audience to do?
 - How do we want the audience to feel?

For City of Austin Sites

City of Austin sites looking to incorporate nature play areas should refer to the Austin Parks & Recreation Department Signage Manual for information on design specifications (available upon [request](#)). Remember to keep **Best Practices** in mind.

Signs must comply with the following specifications:

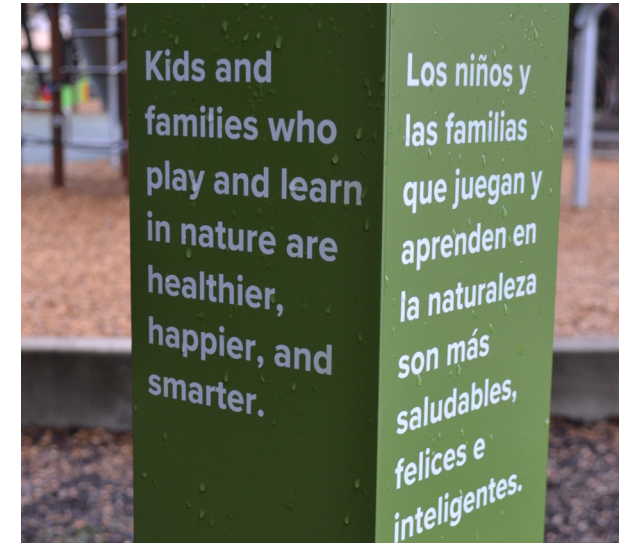
- High pressure laminate with graffiti resistant coating.
- Black posts with a 45° low-profile angle.

- White bar at bottom with logos: PARD in the first position at the left margin with the City of Austin logo next; both logos should be in full color. Contact PARD for the official eps files as needed.
- Proxima Nova for all text.
- Sizing for Safety and Interpretation: Maximum size of 42" x 24", minimum size of 24" x 24".
- Sizing for Wayfinding and Temporary Signage: Maximum size of 42" x 24", minimum size of 6" x 12".

From *PARD's Interpretive Signage for Partners*.

Helpful Resources for language access:

- [plainlanguage.gov](https://www.plainlanguage.gov/); U.S. Government's Plain Language Action and Information Network
- [Digital Style Guide](#), City of Austin (while the focus is on web-based information, the sections for "Use service-oriented language" and "Make content accessible" may provide some helpful insights.)



Nature play space sign at Walnut Creek Metro Park. Photo by City of Austin - Parks & Recreation Dept.

08 MAINTENANCE



MAINTENANCE

Natural play spaces do not require onerous amounts of day-to-day maintenance to keep them safe and viable in the public realm. In fact, decreasing the maintenance of some areas enhances the play value and the natural connection experience of the children in the space. Neat, tidy, and sterile is not always best. Select areas of the nature play space to deliberately leave “messy” with leaves, twigs, loose parts, and longer grass. In order to achieve a successful nature play project, all stakeholders should be involved throughout the design and construction process. Having stakeholders understand and accept/appreciate the “lack of maintenance” is crucial in how these spaces are perceived. This philosophy is especially important with regards to maintenance. The design team should include the maintenance staff in the design process and ensure they are aware of the long-term project goals. Maintenance staff are often ultimately responsible for ensuring the project remains in the intended condition.

Photo (opposite): Volunteers mulching. Photo (top) Volunteers mulching. Photos by City of Austin - Parks & Recreation Dept.



MAINTENANCE INSPECTIONS

A comprehensive maintenance program should be developed for all nature play spaces. All features should be inspected for excessive wear, deterioration, and any potential hazards. Frequency of inspection will depend on the location of the features, number of daily site users, and the design itself. One possible procedure is the use of checklists. However, inspections alone do not constitute a comprehensive maintenance program. Any problems found during the inspection should be noted and fixed as soon as possible.

ROUTINE INSPECTION AND MAINTENANCE ISSUES

- Unsafe connections such as loose bolts, missing end caps, cracks, etc.
- Loose anchoring
- Hazardous or dangerous debris and trash
- Insect damage
- Stinging insect or hazardous wildlife habitat within the play area
- Fall zone surfacing (replenishing, redistributing, refilling holes dug in trafficked areas)
- Hazardous user modifications (such as ropes tied to parts)
- Vandalism



Degradation of stump at Walnut Creek Metro Park. Photo (opposite): Digging space at Faith Lutheran Child Development Center. Photos by City of Austin - Parks & Recreation Dept.

- Worn, loose, damaged, or missing parts
- Severe wood splitting on support structures or rot
- Rusted or corroded metals
- Plant replacements or removal as needed
- Loose parts replenishment as needed
- Accumulation of loose parts (sticks, mounds) over time which inhibit play

REPAIRS

- Design team and Maintenance need to agree on usable life of features (ex. stump from stump jump that starts to deteriorate. Stump could be moved out of the play space and monitored for deterioration to inform future repair needs). Teams should work together to decide if a feature needs to be replaced or removed entirely.
- Designs that incorporate fixed foundations can remain in place while the attached logs and stumps are

removed and replaced at the end of their usable life.

- Cutting or sanding any emerging splits and sealing with a natural wood sealer can keep natural logs, stumps and other wood play pieces in good condition until replacement becomes necessary.
- Vandalism should be addressed on a case-by-case basis with the Maintenance team.

LIABILITY

- Consult your insurance policy and if necessary, make updates before construction of a nature play space.
- Include **proper signage**.
- Records of all maintenance inspections and repairs should be retained.
- When any inspection is performed, the person performing it should sign and date the form used.
- A record of any accident or injury reported in the nature play space should be retained, as applicable.

09 MANAGEMENT



MANAGEMENT

The idea of nature play is inherently “unmanaged.” In essence, children are playing on their own, using their imagination, and interacting with nature in a free-form way. However, this perceived “unmanaged play” takes place in a space that has been planned to provide for free play within safe parameters. Management of play spaces is critical to ensure that the space is used as intended, that it provides for the intended types of play, and that it remains safe and open to all. Proper management will also help ensure safety and provide ideas for maximizing play with different groups/types of children. This section provides suggestions and guidance for managing nature play from a programmatic standpoint – planning for it, structuring it, and managing group play and, perhaps, specific time limits that do not allow for completely open and free play. Evaluation of nature play spaces is also discussed, as evaluation is part of managing a play space to ensure it remains functional and successful.

Fort building at MLK Station Neighborhood Park. Photo by City of Austin - Parks & Recreation Dept



USER EXPERIENCE & PROGRAM PLAN

STRUCTURED VS UNSTRUCTURED PROGRAMMING (GUIDED VS UNGUIDED)

Play has important benefits for all areas of a child’s development. There are many types of play, and each offers benefits and skill-building through unique play experiences. Nature Play spaces can be planned to offer a variety of play experiences – structured/guided, unstructured/self-guided. A brief explanation of each and the benefits they offer is described below, though a more thorough study of the literature is suggested if you are designing a play space.

Structured or guided play is the more familiar concept. Guided play involves play that is

shaped or guided by adults or some sort of learning leader/educator or curriculum, and typically has a goal. This may occur by setting rules or guiding play through cues, suggestions, or comments by an adult or leader. Guided play may be used with individual children or with groups of children. Guided play enhances mastery of specific learning goals, because guidance and cues are used to keep the planned experience on track and focused on the learning goals. Guided play with groups of children also offers opportunity for the development of social skills such as cooperative play, negotiation, and tolerance.

Unstructured or unguided play, also called free play, is open-ended play without specific learning objectives. A great deal of learning occurs when children are able to make their own choices – about what to do, what

materials to use, and how they will interact with the materials and surrounding setting. Unstructured play allows children the freedom to explore, create and discover without predetermined rules or guidelines. This type of play fosters cognitive development as well as social and emotional development, as it allows children to guide their own play and create their own rules. It specifically helps creativity and imagination, problem-solving abilities and social skills.

Benefits of unstructured play include:

- **Creativity and Imagination:** Because there are no fixed rules to follow, children can make their own games and guidelines. This opportunity to create and use imagination is an important aspect of cognitive development.
- **Problem-Solving Abilities:** Children work together during unstructured play to solve problems, like who takes the first turn in a game, or creating rules as a group for a newly imagined game. While activities should still be supervised, children should be allowed

time to work together on problems before the teacher or parent steps in to help resolve a conflict or question, or redirect unsafe choices.

- **Social Skills:** Unstructured play encourages social skills and teamwork. Children take turns, learn to listen and share, develop imaginary scenarios and make decisions together. Because they are the ones driving play, they have the chance to learn on their own among friends.
- **Structured Learning Spaces in Nature**
 - Nature play areas can provide structured spaces to gather and experience nature while also applying environmental, social, cultural, or academic topics (i.e., science, mathematics, art, literature, history, etc.).
 - Examples of cues to stimulate creative, unstructured play:
 - » **Example 1:** A group of sticks is laid out with a chalkboard or

other temporary sign (or simply a verbal cue) saying “What can you build with these?” Cue is not specific or instructive – doesn’t tell the child to build a house or anything specific, but rather encourages them to use their imagination to build/construct something, and gives them permission to do so.

RULES OF THE ROAD

Nature play spaces are inherently outdoors and open. As with any outdoor park or open space used by the public, people can leave an imprint through wear and tear and what they leave behind. Participants, whether individuals or groups, will generate some trash and it will be important to plan ahead for how trash and other by-products will be handled.

If trash cans are provided, is regular trash pick-up planned, arranged, and paid for? In open spaces and many parks, where regular trash pick-up is not budgeted or practical, the philosophy of Leave No Trace



Loose parts play. Photo by City of Austin - Parks & Recreation Dept.

(LNT) is used. LNT encourages living lightly on the land and caring for it—an important aspect of nature play. Noting and caring about the impact we have on the land and space around us is a wonderful concept to incorporate into nature play; that is, it's great to play in nature, but we also have a responsibility to help take care of it.

GUIDELINES FOR LOOSE PARTS PLAY

In addition to general principles of managing outdoor spaces such as Leave No Trace, there are specific aspects to consider with regards to nature play. One common aspect is establishing guidelines for Loose Parts Play. This is an area that inherently involves many “pieces” of nature—small logs, tree cookies, acorns and other small natural objects, bamboo poles, and a myriad of other objects. If left lying around, the loose parts play area can become quite messy. Guidelines should be created to help participants know what is expected. For example, if children have created or built structures, it is likely okay to leave them for others to enjoy, add to, re-design, etc. Additional “parts” that may be left, though,

should be placed back in the loose parts bin or area for housing materials so that the site is left looking refreshed and ready for the next kids to be inspired. See [Loose Parts Appendix](#) item for more detail.

Guidelines should also be established for resetting the space and replenishing items in the loose parts play area. Depending on the space and staffing (whether paid staff or volunteers), it is recommended that someone check the space and “reset it,” putting loose parts back in their assigned areas and replenishing worn or depleted materials. In busy nature play spaces, this may need to be done daily, but having someone responsible for checking the space at least 2-3 times per week is recommended. In spaces with primarily large elements, such as logs and stumps, this may not be necessary at all.

PROMOTION FOR ACTIVATING SPACE/ COMMUNITY OUTREACH

- Social media: Announce opening of new space and periodically highlight nature

play features for continued awareness. Encourage followers to post their own pictures as they use the space and tag for re-sharing.

- Draw attention to the space as a self-guided space for nature play: grand opening celebration, temporary signage, series of cue signs for parents/activity cues for kids.
- Circle back to groups involved in the initial planning process and invite them to view and use the finished space.
- For publicly-accessible spaces:
 - Contact residents of the nearby neighborhood: Notify Home Owners Association (HOA) and/or use the Next Door app to spread awareness & invite residents.
 - Reach out to area nonprofits (both with their own programming that might use the space, or with clients who might like to access the space), schools, after-school programs, homeschool groups. Make them aware of the space,

invite them to use, and ask them to spread the word to their families/clients/network.

- Encourage meet-ups.
- Host informal events.
- Host or partner with an organization/parent group/school group to host volunteer opportunities. If neighbors and users of the space feel connected and invested, they may help informally maintain the space.

EVALUATION

Evaluation is simply a way to know what progress is being made toward stated goals. It offers tools to assess progress, make changes if needed, and to continue setting new goals. For the purposes of this guide, evaluation of a nature play space is focused on the design and use of the space, not potential programming that will occur in the space. As an iterative process, evaluation should be conducted throughout the creation and ultimate

use of the space, making any necessary changes along the way and then reassessing the effectiveness of those changes. Developing a committee can be helpful in designing evaluation methods and determining what needs to be evaluated.

PHASES OF EVALUATION IN PROJECT DEVELOPMENT⁴²

The field of evaluation describes three different types relative to when the evaluation occurs: front-end, formative, and summative.

Front-end evaluation is conducted in advance of a project and helps inform the development of the project. Examples include surveys, interviews, case studies and observations of other existing sites.

Front-end evaluation is typically the lowest cost, simply because adapting a plan is much less costly than making changes after construction is complete and the site is opened. Focusing on more advance planning or front-end evaluation will result



Nature creation during programming from Earth Native Wilderness School at Walnut Creek Metro Park. Photo by City of Austin - Parks & Recreation Dept.

in end results that are better researched and informed.

Formative evaluation occurs while a project is under development and is used to make changes to improve the design of a program or exhibit before it is implemented. These are often modifications in a design, or can be additions to the design based on discoveries that occur during the process.

Summative evaluation occurs, as the name implies, after a project is complete and opened. Examples include changes due to safety considerations, additions based on needs discovered after the exhibit opens, or simply the assessment of the exhibit “in action” to determine the extent to which it is meeting the intended needs and goals. Summative evaluation is also used as a tool to improve or enhance ongoing and future activities based on assessment of current/ existing use.

TYPES OF EVALUATION

Evaluation is typically divided into two categories: quantitative and qualitative.

Quantitative evaluation is thought of as “numbers based.” Factors being evaluated offer numerical data upon which decisions may be based. This includes the simplest of data about program participants such as user count/audits, and also frequently includes demographics about who is using the space, such as age, grade levels, zip codes, socio-economic data, frequency of use, or other data points that provide an indication of how a program/nature play space is being used. Increasingly, demographic assessments include equity of service. Zip codes of participants may be one good data point for equity assessments.

Surveys are effective tools when conducting quantitative evaluations. Surveys can take many shapes and forms and can be used to gather both quantitative and qualitative data. A specific survey tool that is available is the System for Observing Play and Recreation in Communities (SOPARC). This is a validated direct observation tool for assessing park and recreation areas that includes park users’ physical activity levels, gender, activity

modes/types, and estimated age and ethnicity groupings.

Qualitative evaluation has historically been thought of as making meaning or assessing through stories. Qualitative evaluation includes many tools and techniques including analysis of journal entries or other writing or drawings made by participants, participant interviews, observation of play (which can yield both quantitative as well as qualitative data), teacher/leader/parent interviews, and case studies of individuals, groups/cohorts, sites or community-based studies of programs. Qualitative evaluation is effective when trying to paint a more descriptive picture of a program and its benefits. It can yield essential information and context that may be missed through quantitative-only assessments.

It should be noted that both quantitative and qualitative evaluation are valid and can be used successfully, and that tools from both realms are often integrated into assessment tools. The focus should not be on which type is “better” but rather which tools from either type are most helpful in answering the desired evaluation questions or goals.

EVALUATION OF THE PLAY SPACE

In programming, evaluation is often thought of as a way to assess the participants and the learning or other benefits they gain from a program, including the assessment of the physical space. This includes regular/required periodic assessments of the physical aspects for possible replacement – physical aspects such as pathways, fences, and wear and tear can serve as signs of success, but also as a note for possible repair or replacement. This will most often fall under quantitative evaluation.

Evaluation of the space can also be used to learn about accessibility of spaces. Are users finding and using the space as intended? How is the space actually being used - whether as intended or not? Does the space encourage play? What types of interaction tend to occur (i.e., child/child, adult/child, group or individual play)? Much can be learned from observation of the play space, and much of this data is quantifiable as it is frequency or categorical data.

Qualitative data can also be collected



Natural dye painting created during programming from Earth Native Wilderness School at Walnut Creek Metro Park. Photo by City of Austin - Parks & Recreation Dept.

concerning themes like the quality of play. Are users engaging in complex play, or do they master the task or become bored after just a few minutes? What are the types of play in which they engage? Physical games like climbing and exploring, imaginative/creative play such as creating fairy homes or role-playing? How does their play differ from more traditional playground structures? This is a rich area for looking at types/categories of play as a way to differentiate and assess the value of nature play spaces as compared to traditional playgrounds.

Note about evaluation: Any evaluation must follow guidelines for consent to participate as part of the code of ethics of human subjects research. Observations, in particular, must follow any guidelines on consent - Informed consent means telling individuals about your evaluation and asking whether they are willing to participate.⁴⁴

FREQUENCY OF ASSESSMENT

Frequency of assessments will vary based on the site, program, goals, or requirements of funders/sponsors. Initial assessments in

the first year of a play space opening should be more frequent—could be weekly for the first month, and then lessen to monthly, quarterly, or once or twice per year. Care should be taken in scheduling assessments to make sure they are planned to cover a broad range of play experiences. For example, include some assessments on weekdays as well as weekends, when the participants, groups, and types/level of play are likely to be very different. A random chart can be used to assign assessments randomly, but opportunistic planning is also valid. This might look like 2-3 weekend dates, 2-3 weekday dates, and also include assessments when specific programs or group visits are known to be occurring.

Frequency and type of assessment will also vary based on whether the nature play space is located in an open park or a managed space such as a daycare or other programmed space. These will likely have more regular management, and will have regular “eyes” on the space as teachers/leaders are in the space with groups of children.

10 APPENDIX



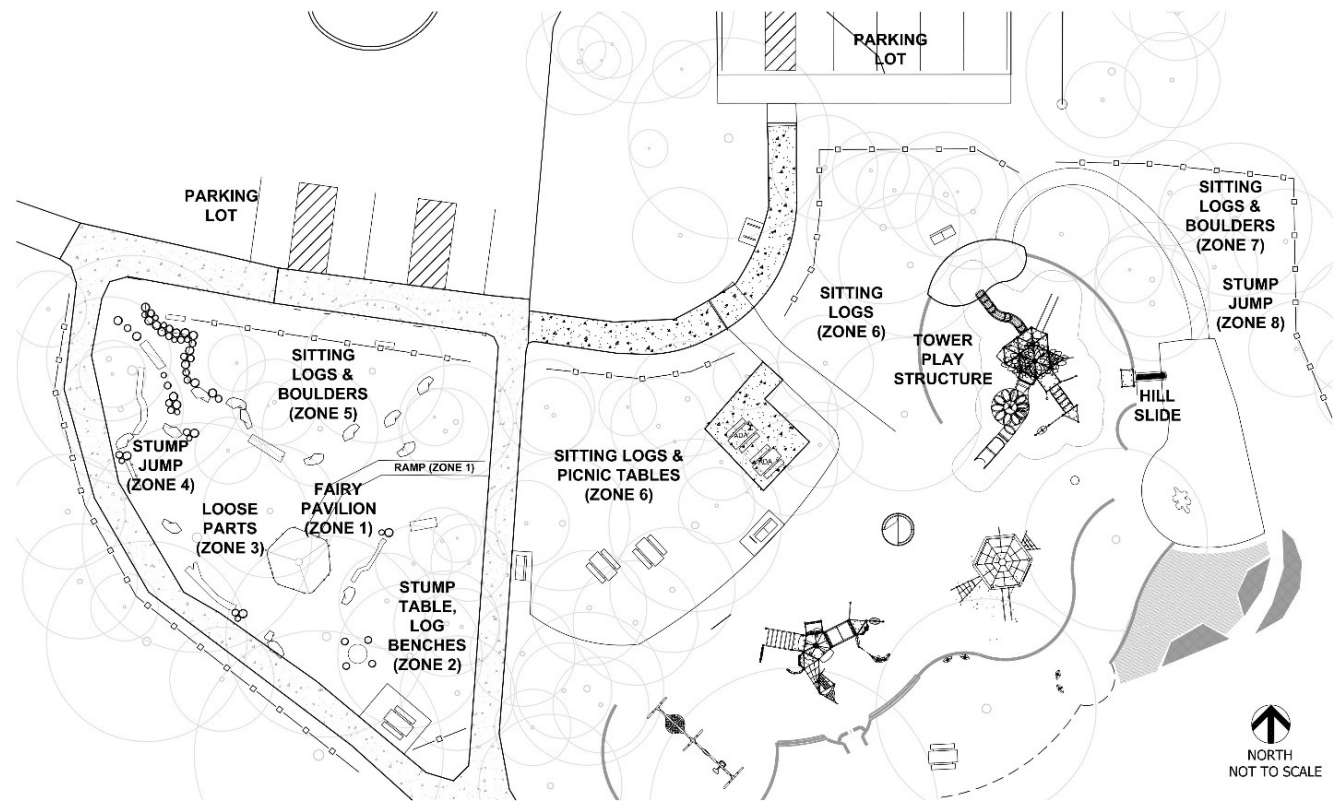
APPENDIX A

MAINTENANCE SAFETY CHECKLIST FOR FAIRY PAVILION & NATURE PLAY FEATURES AT WALNUT CREEK MP

For use by PARD maintenance and playground safety staff during regular reviews of nature play features. While they do not necessarily fall under playground safety standards, nature play features should be checked regularly for compliance with general safety measures and practices.

PLAYGROUND FEATURES TO BE CHECKED:

- Fairy Pavilion + walkway ramp (Zone 1)
- Stump table and cut log benches (Zone 2)
- Loose parts play zone (Zone 3)
- Stump jump (Zone 4)
- Sitting logs and boulders (Zone 5)
- Sitting logs in picnic table area (Zone 6)
- Sitting logs and limestone blocks by slide tower (Zone 7)
- Stump jump by slide tower (Zone 8)



NATURE PLAY AREA
WALNUT CREEK METRO PARK

Photo (previous): From from [Nappy.com](https://www.nappy.com).

ZONE 1 Fairy Pavilion + Walkway Ramp	ZONE 2 Stump table + cut log benches	ZONE 3 Loose parts play area (cedar logs, bamboo poles, wood blocks, assorted items)
<input type="checkbox"/> Protruding objects/snags <input type="checkbox"/> Cans on roofline are flat/ no sharp edges <input type="checkbox"/> Openings/Entrapments <input type="checkbox"/> Bees/Wasps/Ants/other nuisance wildlife <input type="checkbox"/> Decay/split wood/ structural issues <input type="checkbox"/> Sharp objects <input type="checkbox"/> Standing water <input type="checkbox"/> Other	<input type="checkbox"/> Protruding objects/snags <input type="checkbox"/> Standing water <input type="checkbox"/> Mulch at base of stump <input type="checkbox"/> Bees/Wasps/Ants/other nuisance wildlife <input type="checkbox"/> Decay/split wood/ structural issues <input type="checkbox"/> Sharp objects <input type="checkbox"/> Stump secure at base <input type="checkbox"/> Other	<input type="checkbox"/> Protruding objects/snags <input type="checkbox"/> Standing water <input type="checkbox"/> Enclosed spaces/ potential entrapments <input type="checkbox"/> Decay/split wood/ structural issues <input type="checkbox"/> Sharp objects <input type="checkbox"/> Nuisance wildlife <input type="checkbox"/> Other
Notes: <hr/> <hr/> <hr/>	Notes: <hr/> <hr/> <hr/>	Notes: <hr/> <hr/> <hr/>

<div>ZONE 4</div> <div>Stump jump</div>	<div>ZONE 5</div> <div>Sitting logs + boulders</div>	<div>ZONE 6</div> <div>Sitting logs in picnic table area</div>
<div><input type="checkbox"/> Protruding objects/snags</div> <div><input type="checkbox"/> Standing water</div> <div><input type="checkbox"/> Mulch at base of stump</div> <div><input type="checkbox"/> Bees/Wasps/Ants/other nuisance wildlife</div> <div><input type="checkbox"/> Decay/split wood/structural issues</div> <div><input type="checkbox"/> Sharp objects</div> <div><input type="checkbox"/> Stump secure at base</div> <div><input type="checkbox"/> Other</div> <div>Notes:</div> <div></div> <div></div> <div></div>	<div><input type="checkbox"/> Protruding objects/snags</div> <div><input type="checkbox"/> Standing water</div> <div><input type="checkbox"/> Mulch at base of log/boulder</div> <div><input type="checkbox"/> Bees/Wasps/Ants/other nuisance wildlife</div> <div><input type="checkbox"/> Decay/split wood/structural issues</div> <div><input type="checkbox"/> Sharp objects</div> <div><input type="checkbox"/> Boulder/log secure at base</div> <div><input type="checkbox"/> Other</div> <div>Notes:</div> <div></div> <div></div> <div></div>	<div><input type="checkbox"/> Protruding objects/snags</div> <div><input type="checkbox"/> Standing water</div> <div><input type="checkbox"/> Mulch at base of stump</div> <div><input type="checkbox"/> Bees/Wasps/Ants/other nuisance wildlife</div> <div><input type="checkbox"/> Decay/split wood/structural issues</div> <div><input type="checkbox"/> Sharp objects</div> <div><input type="checkbox"/> Stump secure at base</div> <div><input type="checkbox"/> Other</div> <div>Notes:</div> <div></div> <div></div> <div></div>

ZONE 7 Sitting logs + limestone blocks by slide tower	ZONE 8 Stump jump by slide tower	MAINTENANCE RESOURCES
<input type="checkbox"/> Protruding objects/snags <input type="checkbox"/> Standing water <input type="checkbox"/> Mulch at base of log/boulder <input type="checkbox"/> Bees/Wasps/Ants/other nuisance wildlife <input type="checkbox"/> Decay/split wood/ structural issues <input type="checkbox"/> Sharp objects <input type="checkbox"/> Boulder/log secure at base <input type="checkbox"/> Other	<input type="checkbox"/> Protruding objects/snags <input type="checkbox"/> Standing water <input type="checkbox"/> Mulch at base of stump <input type="checkbox"/> Bees/Wasps/Ants/other nuisance wildlife <input type="checkbox"/> Decay/split wood/ structural issues <input type="checkbox"/> Sharp objects <input type="checkbox"/> Stump secure at base <input type="checkbox"/> Other	<p>If/when maintenance issues arise, please connect with your PARD Planning contacts before issuing a work order or reaching out to a contractor.</p> <p>PARD Planning Contacts:</p> <ul style="list-style-type: none"> • Melody Alcazar – Phone: (512) 974-9466, Email: melody.alcazar@austintexas.gov • Julia Hill – Email: Julia.hill@austintexas.gov <p>Colored plexiglass replacement:</p> <ul style="list-style-type: none"> • Allied Plastics – 9601 Dessau, Ste 305 Phone: (877)-613-3555 Email: dputman@alliedplastic.org
Notes: <hr/> <hr/> <hr/>	Notes: <hr/> <hr/> <hr/>	

APPENDIX B

VETTING QUESTIONS

A couple of key questions you may want to ask the references you're provided:	
How was their overall performance?	
Were they communicative all along the way and were you assigned one point of contact through the entire project? Having one person to talk to from beginning to end is a great way of keeping lines of communication open and takes significant stress off of you as the client.	
Did they keep a clean and tidy jobsite?	
Did they deliver as promised, were timelines generally met, did everything work as it should, were there any issues during the course of the work that they felt could've been improved upon?	
Would the reference use the designer / architect / installer again?	
Could you come and see the work that was installed?	
Were there any warranty issues that came up after installation and how did the company handle that?	
Can their team handle all aspects of the installation, from irrigation to planting and clean-up, or will they be bringing in sub-contractors for any portion of the work? And, if they are bringing in sub-contractors, ask them why?	

**A list of questions that may be helpful to
ask of the contractors:**

How many of these have you designed and how many have you successfully installed?	
When did you start doing these and why?	
Is there someone who will be my direct point of contact through the entire process?	
Are you insured and can you provide me with proof of insurance?	
What is the anticipated timeline for starting our design and about how long will it take to complete the design?	
This will vary between designers, but the more edits there are, the more time it will take. So make sure you either know what you want for sure, or find someone who can translate your ideas to concept well.	

APPENDIX C

LOOSE PARTS

LOOSE PARTS NATURE PLAY

Loose Parts Nature Play is...

Unstructured outdoor play with a variety of natural materials, such as bamboo poles, tree cookies, shells, rocks, fossils, and more! This kind of play has been proven to promote creativity and imagination; is excellent physical activity; promotes cooperation and reduces stress; can improve focus, attention, motor skills and coordination. Overall it is great fun and fosters connection to nature.



Be a facilitator

- Create inviting environment: display items in an interesting way for participants.
- Use the items to make whatever your group can come up with! Get creative & think outside the box.
- Encourage & support: try to let the participants do the thinking & making. Ask them questions, have them explain their work, & encourage them to try on their own.



Suggested Rules

- Be careful not to hurt yourself or others
- No weapons
- Share materials
- Someone will take your creation down when you leave





Loose Parts Nature Play: Suggested Materials

- Acorns
- Seed pods
- Flowers
- Pine cones
- Bark
- Misc. plant parts
- Shells
- Rocks
- Fossils
- Bones, cleaned
- Sand or soil
- Small sticks, 4" - 8" long
- Leaves, collect day-of
- Grasses, collect day-of
- Bamboo poles, trimmed, 3' - 8' long
- Wood poles, trimmed, 3' - 8' long
- Palm fronds, trimmed
- Tree cookies, various sizes
- Rocks with numbers, letters, or facial features painted on them
- Stick-lets
- Paracord or other rope, cut into sections
- Animal figurines or stuffed animals
- Small containers to group materials
- Fabric, sheets or tarps



APPENDIX D

COBOR POSTERS

AUSTIN CHILDREN'S

OUTDOOR
BILL *of* RIGHTS

WHEREAS: Studies show that children who learn and play in nature are healthier, happier and perform better in school.

WHEREAS: Children who have safe access to parks, zoos, nature centers, lakes and rivers, and other public outdoor spaces are more resilient, have higher self-esteem, are more confident, are better problem solvers and are more creative.

WHEREAS: All children of all ages, backgrounds, and abilities should feel welcome at all of Austin's parks, pools, trails, waterways and open spaces.



WHEREAS: Communities in disadvantaged areas with access to nature benefit from greater health equity with lower rates of mortality and disease.

WHEREAS: Children who develop a positive relationship with nature are more likely to become tomorrow's stewards of our natural heritage.

WHEREAS: Through its parks, trails, waterways, open spaces, and other natural spaces, Austin provides a wide variety of quality outdoor opportunities.

THEREFORE: We support this Children's Outdoor Bill of Rights in which children of all ages, backgrounds, and abilities have the right to:

Climb a tree • Catch a fish • Picnic in a park • Hike a trail • Ride a bike
Splash in the creek or river • Discover plants and wildlife
Play in the sand and mud • Gaze at the night sky • Chase a firefly
Plant a seed and watch it grow • Harvest and eat a fruit or vegetable



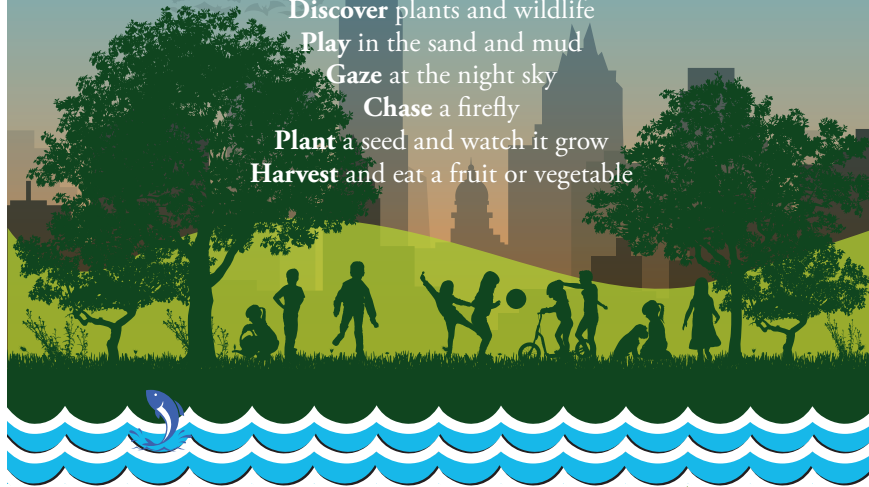
Children in Nature
Collaborative of Austin

Learn more at www.austintexas.gov/cccn

AUSTIN CHILDREN'S OUTDOOR BILL of RIGHTS

In which every child has the right to:

Climb a tree
Catch a fish
Picnic in a park
Hike a trail
Ride a bike
Splash in a creek or river
Discover plants and wildlife
Play in the sand and mud
Gaze at the night sky
Chase a firefly
Plant a seed and watch it grow
Harvest and eat a fruit or vegetable



Understanding that research shows children who learn and play in nature are healthier, happier and perform better in school, we enthusiastically support this Children's Outdoor Bill of Rights.

Learn more at www.austintexas.gov/cccn

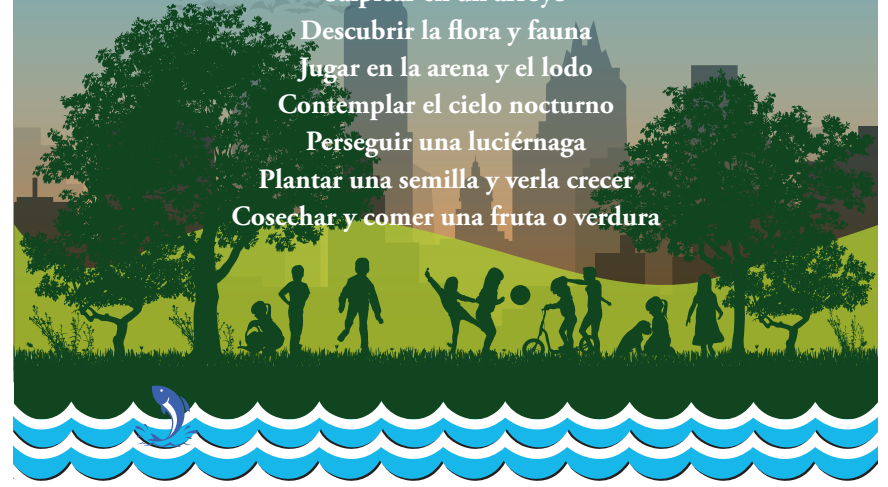


Declaración de derechos de los niños de Austin

al aire libre

en la cual cada niño tiene derecho a:

Subirse a un árbol
Atrapar un pez
Irse de día de campo
Irse de excursión
Andar en bicicleta
Salpicar en un arroyo
Descubrir la flora y fauna
Jugar en la arena y el lodo
Contemplar el cielo nocturno
Perseguir una luciérnaga
Plantar una semilla y verla crecer
Cosechar y comer una fruta o verdura




Entendiendo que las investigaciones demuestran que los niños que juegan y aprenden en la naturaleza son más saludables, más felices y se desempeñan mejor en la escuela, apoyamos con entusiasmo esta Declaración de los Derechos del Niño al Aire Libre.

www.austintexas.gov/cccn



APPENDIX E

RECLAIMED WOOD SPECIFICATIONS

Nature Play Reclaimed Wood Specifications		
Tree cookies for loose parts areas	<p>Species: Oak, elm, cedar, hackberry, cottonwood, cypress, ash, mulberry, others (native preferred)</p> <p>Size: 8” diameter plus, smaller stems and branches removed, bark on, freshly cut, 1” thick (if you are able to cut)</p>	
Large logs for horizontal borders, balance logs, seating	<p>Species: oak (preferred), osage orange, young cypress, cottonwood, elm, hackberry, sycamore, pecan</p> <p>Size: 12” diameter plus (larger is better), 6’ – 15’ long; smaller stems and branches removed, freshly cut, bark on, prefer pieces that are curved or otherwise interesting, can keep larger limbs attached if possible</p>	

Nature Play Reclaimed Wood Specifications (continued)

Large logs
for vertical
borders, stump
jumps, climbing
features, tables,
seating

Species: oak (preferred), osage
orange, young cypress, cedar,
juniper, cottonwood, elm, hack-
berry, sycamore, pecan

Size: 8" diameter plus, lengths
2'–5'; smaller stems and branches
removed, freshly cut, bark on, can
keep larger limbs attached
if possible



Questions?
Contact:

Melody Alcazar
Melody.Alcazar@austintexas.gov
512-974-9466

APPENDIX F

RISK ASSESSMENT - SITE

RISK ASSESSMENT AIDE MEMOIR

RISK ASSESSMENT - SITE

Location: _____ Date: _____

Hazard Description	
Severity (without control measures)	
Who could be harmed?	
Risk Control Measures	
Currently in Place	
Likelihood (with control measures)	
Risk Level	
Action Required	
Actioned (date, signature)	

*When calculating the risk level of a location, it is important to be aware of and refer to the Risk Assessment Aide Memoir.
Adapted from Playful Pedagogy training from the North Carolina Zoo.*

RISK ASSESSMENT AIDE MEMOIR

Hazard Severity	Examples of Type of Injury
Low	Scratch, bruise, minor cut, minor burn. Normal play possible after first aid treatment.
Medium	Burns, severe cuts, minor fractures (fingers and toes), strains, sprains, temporarily disabling back injuries. Accident results in loss of time less than 3-day injury.
High	Permanent disability, amputations (e.g. loss of finger), other fractures, over 3-day injury, multiple injuries, fatalities.

Likelihood of Occurrence	Example
Not likely	Harm will seldom occur. So unlikely, the probability of occurrence is close to zero.
Possible	Harm could occur frequently.
Likely	Harm is certain or near certain to occur. Repeated occurrences are expected. If conditions continue an accident or incident is almost certain to occur.

Express the level of risk associated with identified hazards by multiplying the hazard severity by the likelihood of the hazard occurring. Consult the risk matrix, to express the risk level:

Risk			
Likelihood → Hazard Severity ↓	Not likely	Possible	Likely
Low	Very low	Low	Medium
Medium	Low	Medium	High
High	Medium	High	Very high

RISK ASSESSMENT AIDE MEMOIR (CONTINUED)

Risk Level	Action
Very Low	No action is required, though assessment must be recorded.
Low	No additional controls are required. Consideration may be given to a more cost-effective solution or improvement that imposes no additional cost burden. Monitoring is required to ensure that the controls are maintained.
Medium	Efforts should be made to reduce the risk, but the costs of prevention should be carefully measured and limited. Risk reduction measures should be implemented within a defined time period. Where moderate risk is associated with extremely harmful consequences, further assessment may be necessary to establish more precisely the likelihood of harm as a basis for determining the need for improved control measures.
High	Play should not start until the risk has been reduced. Considerable resources may have to be allocated to reduce the risk. Where the risk involves play in progress, urgent action should be taken.
Very High	Play should not begin or continue until the risk has been reduced. If it is not possible to reduce risk even with unlimited resources, play must remain prohibited.

Adapted from Playful Pedagogy training from the North Carolina Zoo.

APPENDIX G

TREE COOKIE RECIPE

HOW TO MAKE TREE COOKIES

Adapted from Project Learning Tree at the Minnesota Department of Natural Resources

Use this “recipe” to make tree cookies that not only look good but will also hold up in the classroom for years. **DO ALL THE STEPS!**

Tree cookie size varies. For classroom use, the best cookies are about ½ to 1-inch thick, and 3–6 inches in diameter.

1. **Select a Species.** Select species that have nice, dark annual rings, such as pines, spruces, firs, walnut, and buckthorn. Conifers and Christmas trees (spruce, fir, cedar, pines) provide wood that is soft, easy to cut and sand, and display nice rings. Deciduous trees that show nice rings include oaks, ashes, maples, elms, cherry, and walnut. Both trunks and thick branches contain annual rings. Some of the most interesting cookies have rings that show a variety of growth patterns, or fire scars, or wounds.
2. **Cut the Tree.** Use a large tooth pruning saw (available at hardware stores) to cut the tree at the base and trim off the branches. Then cut the main tree stem into log segments three or four feet in length and transport them back to work on.
3. **Dry the Logs.** Set the logs or thick branches in a dry, well-ventilated place until sufficiently dried, usually a couple months, depending on the size. Better, if you have access to a lumber kiln, dry the log. Just ask the yard supervisor to stick the tree cookie logs in with the lumber being dried. After three or four days in the kiln, the logs should be sufficiently dry and feel much lighter.

A note about cracking...
By nature, wood often cracks when it dries, and that is just fine for this project! However, if you desire the perfect “uncracked” cookie, there is a lot of discussion about achieving this. The best way to prevent cracking is to cut cookies from a dried, not green, log or branch. The smaller the cookie, the less likely cracking will occur. Some say that cookies are less likely to crack if they are cut at an angle so that the edges are slightly sloped. Others say it’s better to cut cookies from dried limbs, as the grain is often tighter in the limbs than in the main stem.

4. **Slice the Logs.** Slice the logs or thick branches as thin as the wood allows (typically ½ to 1-inch thick). Use a large-tooth pruning saw or a motor-driven saw such as a radial arm saw.
5. **Dry the Cookies.** If you dried your cookies as logs, skip this part. Otherwise, drying is crucial! If cookies are not dried properly, they will attract mold and fungus. Store your cut cookies in a dry, well-ventilated surface under low humidity for three to ten days. Turn them over daily to allow both sides to dry. Placing them on a driveway on a sunny day also works well. Air movement is more critical than the amount of sun. If you need faster results, it is possible to very carefully and slowly dry them in an oven set on “warm” (200 degrees or less). This should be done under close monitoring and supervision. Place the cookies on a cookie sheet or foil and allow to slowly dry for three to five hours, turning cookies over occasionally.
6. **Sand the Cookies.** Properly dried cookies may be sanded by hand or with a mechanical table mounted belt sander. Sand first with course paper

and finish with medium paper. Sand the cookies until you can count the annual rings easily.

7. **Almost Done.** To stand up to the rigors of classroom life, brush, dip, or spray each cookie with a coat of clear varnish or polyurethane.
8. **Label.** It’s an added educational benefit if you can tell the students what kind of tree this cookie came from! Write the species’ name on a piece of masking tape and stick it to the final product. Common names like “white oak” or Latin names like “Quercus alba” are ok.
9. **Deliver the Cookies.** Put the cookies in a box and label them with the species names (if known), location of harvest, and your name. Then, drop the cookies off at any DNR office or field station. Tell a DNR staff person on site that the cookies are for Laura Duffey in the Central Office (651-259-5263 or 888-646-6367 or laura.duffey@state.mn.us)

Some cookie-makers soak freshly-cut cookies in a solution of 2 pounds of sugar for every gallon of water for at least two days. Use a non-metal container and hold the wood down with rocks to submerge. Cookies larger than 3 inches in diameter and ½- inch thick need more time. Stir the solution daily. After soaking, put in a well-ventilated place to dry (1 week).

Finally, you can get a similar result if you soak fresh-cut cookies in polyethylene glycol (PEG) when the wood is still green. PEG draws the water out and replaces it with the PEG—a waxy material. It takes a few days to dry and the wood becomes a little heavier. PEG looks and feels like paraffin wax. Dissolve it in an equal amount of hot water, then soak the wood in it for about a month, making sure the wood is totally submerged. PEG is sold under the name of “MiraLAX” (it’s used for constipation). It can be expensive. However, you can get a coupon for it online at the MiraLAX website and find it at Target.

10 GLOSSARY



GLOSSARY

COMMUNITY ENGAGEMENT: process by which an organization will consult, involve, listen and respond to the community through ongoing relationships and dialogue.

FALL HEIGHT: the vertical distance between the highest designated play surface on a piece of equipment and the protective surfacing beneath it.

FORMATIVE EVALUATION: provides information on how well a program or exhibit functions, or how well it communicates its intended messages. Formative evaluation occurs while a project is under development and is used to make changes to improve the design of a program or exhibit before it is implemented.

FRONT-END EVALUATION: provides background for future planning and is a way to determine a visitor's prior knowledge/experience and expectations.

GREEN SCHOOLYARD: school grounds that include an outdoor classroom, active habitat and/or vegetable gardens, rainwater collection and at least four other green features, such as nature play, nature trail, pond, solar, chickens, orchard, etc.

GREEN SCHOOL PARK: green schoolyard that is open, accessible, and activated for the public during out of school time.

HAZARD: something that is unknown to the child, such as another kid about to jump, or a snag on a bolt.

INFORMED CONSENT: telling individuals about your evaluation and asking whether they are willing to participate.

INTENDED USE: used in reference to how a play structure is categorized, it references the primary goal of a structure (climbing vs. sitting, etc.).

LOOSE PARTS: natural or synthetic found, bought, or upcycled materials (acorns, hardware, egg cartons, fabric scraps, stones, aluminum foil, etc.) that children can move, manipulate, control, and change within their play.³⁷

NATURE PLAY: any type of play that involves the interaction with or use of objects that nature provides.

NATURE PLAY SPACE: a defined area for all ages and abilities, which encourages creative and unstructured play while exploring natural materials.

Photo (previous) by City of Austin - Parks & Recreation Dept.

QUANTITATIVE RESEARCH: used to quantify the problem by generating numerical data or data that can be transformed into usable statistics. It is used to quantify attitudes, opinions, behaviors, and other defined variables – and generalize results from a larger sample population.

QUALITATIVE RESEARCH: primarily exploratory research. It is used to gain an understanding of underlying reasons, opinions, and motivations. This data is usually gathered using conversational methods such as interviews or focus groups.

RISKY PLAY: thrilling and exciting forms of play that involve a risk of physical injury.

SUMMATIVE EVALUATION: determines the impact of a project after it's completed. Summative evaluation is often used to improve future activities through an understanding of existing programs.

USE ZONE: the surface under and around a piece of equipment onto which a child falling from or exiting from the equipment would be expected to land. These areas are also designated for unrestricted circulation around the equipment.



Photo by City of Austin - Parks & Recreation Dept.

11 RESOURCES



RESOURCES

NATURE PLAY GUIDES

- Denver Parks & Recreation | [Nature Play in the Built Environment: Design Standards and Guidelines](#)
- Tualatin Hills Park & Recreation District (Oregon) | [Nature Play Area Guidelines](#)
- Maryland Dept. of Natural Resources | [Nature Play Spaces](#)
- San Francisco Children & Nature | [San Francisco Nature Exploration Area Playbook](#)
- WeConservePA | [Nature Play: Nurturing Children and Strengthening Conservation through Connections to the Land](#)
- Natural Learning Initiative | [Nature Play & Learning Places](#)
- GreenHearts Inc. | [Design Principles for Nature Play Spaces](#)
- Bienenstock Natural Playgrounds | [Nature Play Guidelines](#)
- Evergreen | [Landscape and Child Development: A Design Guide for Early Years–Kindergarten Play-Learning Environments](#)
- National Wildlife Federation | [Nature Play at Home: A Guide for Boosting Your Children’s Healthy Development and Creativity](#)

SAFETY

- ASTM International | [Standard Consumer Safety Performance Specification for Playground](#)
- Equipment for Public Use Consumer Product Safety Commission | [Public Playground Safety Handbook](#)
- OLE! Texas | [The Regulatory Framework for Outdoor Learning Environments in Texas Childcare](#)
- International School Grounds Alliance | [Risk and Play in Learning](#)

ACCESSIBILITY

- Texas Department of Licensing and Regulation | [Architectural Barriers Texas Accessibility Standards \(TAS\) - Appendix](#)
- Center for Outreach, Research & Education | [Inclusive Play](#)

Photo (opposite): Will Smith Zoo School at the San Antonio Zoo. Photo by City of Austin - Parks & Recreation Dept.



Bone museum table. Photo by City of Austin - Parks & Recreation Dept.

MAINTENANCE

- Play England | [Nature Play Maintenance Guide](#)
- The Outdoor Playbook | [Paving and Ground Surfaces](#)

BENEFITS OF NATURE PLAY

- Children & Nature Network | [Health & Wellness](#)
- Children & Nature Network | [Academic Outcomes](#)
- Children & Nature Network | [Environmental Stewardship](#)
- We Conserve PA | [Nature Play](#)
- Natural Learning Initiative | [Adding Value to Early Childhood Outdoor Play and Learning Environments](#)

PLANTS

- Best of Texas | [Plant Database](#)
- City of Austin | [Grow Green Plant Guide](#)

- Playcore | [Plants for Play Database](#)
- Robin Moore | *Plants for Play: A Plant Selection Guide for Children's Outdoor Environments*, Paperback (1993)

INTERPRETATION AND GRAPHICS

- National Association for Interpretation | [Non-profit organization dedicated to advancing the profession of heritage interpretation](#)
- National Parks Service | [Common Learning Portal](#)
- Eppley Institute | [Partners with recreation, park, and public land organizations in order to enhance access, choice, and quality of natural, cultural, and recreational experiences for all people](#)
- Society for Experiential Graphic Design | [Signage Requirements in the 2010 Standards for Accessible Design](#)
- Vera Institute of Justice | [Creating Accessible Print Materials](#)

- [plainlanguage.gov](https://www.plainlanguage.gov/) | U.S. Government's Plain Language Action and Information Network
- City of Austin | [Digital Style Guide](#)

EQUITY AND INCLUSION

- Center for American Progress | [The Nature Gap: Confronting Racial and Economic Disparities in the Destruction and Protection of Nature in America](#)
- Bienenstock Natural Playgrounds | [Inclusion and Equity](#)
- Encyclopedia on Early Child Development | [Creating Inclusive Naturalized Outdoor Play Environments](#)
- Children & Nature Network | [Anti-racism in the Outdoors: Resources related to inclusion, diversity, equity & access](#)

OTHER

- Texas Children in Nature | [Network of over 600 partner organizations and individuals who are working together to](#)

connect children and families with nature in Texas

- Nature Rocks - Austin | [Website to find the nature-based activities and events, green spaces, nature centers and parks near you](#)
- Bienenstock Natural Playgrounds | [Developer of natural playgrounds](#)
- Natural Playgrounds | [Developer of natural playgrounds](#)
- Playcore | [Playground developer](#)



Photo by City of Austin - Parks & Recreation Dept.

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CITATIONS

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Photo (opposite): Will Smith Zoo School at the San Antonio Zoo. Photo by City of Austin - Parks & Recreation Dept.

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Photo (next): Kids at Pease park. Photo by Pease Park Conservancy

