# inclusive play design guide

- Introduction ................................................................. 1
- Guidelines & Laws ...................................................... 7
- Planning & Preparation (PP) ....................................... 9
- Layout & Accessibility (LA) ........................................ 13
- Play Richness (PR) ...................................................... 26
- Site & Amenities .......................................................... 34
- Glossary ..................................................................... 40

- Assessment Sheet ....................................................... 42
- Six Steps to Inclusion .................................................. 43
Foreword

This Design Guide has been developed by a group of playground and child development experts as an inspirational and educational resource to help create great outdoor play environments for everyone.

“Everyone” means typically-developing children, the children who are on the autism spectrum, and the children who have a cognitive disability.

“Everyone” means all the people in the family, not just the children.

According to the United States Census, 12% of the population has a severe disability that affects at least one function of daily living. But these people do not live in a vacuum; they have parents, children, siblings, grandparents, who may be involved in a visit to the playground. Therefore approximately 36% (1 in 3) of the population is affected by barriers that people with disabilities directly encounter each day.

If people building playgrounds think about access for people with disabilities, it’s the children they have in mind. However, the issue is much larger. There are parents and grandparents with disabilities in every community who are prevented, by the design of the playground and surrounding environment, from taking their typically developing children to play.
What are the goals of the Design Guide?
To offer inspiration and resources to decision makers, which will increase their chances of success in creating an inclusive, universally designed outdoor playground.

What is an inclusive playground?
An inclusive playground addresses the needs of all people including those who have autism, intellectual disabilities, hearing impairments, cerebral palsy, spina bifida and other disabilities. It also addresses the needs of children who are typically developing. An inclusive playground includes everyone and challenges them at their level.

How to use the Design Guide
The Design Guide includes the best practices used in the planning and development of outdoor inclusive play. Play installations that succeed in being inclusive will use strategies from these four categories in the Design Guide: Planning & Preparation, Layout & Accessibility, Play Richness, and Site & Amenities.

Each play space project has a context that affects which of the strategies in the Design Guide are chosen. This guide is intended to be an inspiration and a resource to people making decisions in their specific context.

A project with a small budget can be inclusive if the project champions think through the decision process as if they were using the space as a non-typically developing person. The Design Guide considers each step in an inclusive way.

Many roads lead to the same place. The intent in each category is meant to describe what success looks like. The strategies are examples of actions that achieve that intent. There may be other ways to achieve the intent.

Read the intents in the guide to create a composite picture of what an inclusive play space could be. Decisions for the project at hand can then be made that may or may not use the strategies listed.

Who is the Design Guide for?
Anyone who cares about inclusion and aims to create a play space in their community for people of all ages and abilities.

How was the Design Guide developed?
The guide was developed through a consensus-based process and led by a committee of industry professionals (see page 6). This diverse group of individuals represented a cross-section of child development, inclusive advocacy, landscape architecture and playground industry expertise. The majority of the working group are parents to a child with a disability.

Can a customer just buy interesting products and stick them together?
Inclusive playground success is not just putting thoughtful, well-designed equipment in the playground, but being mindful of the impact of the decisions made in the entire experience, from the directional signage, to the overall playspace layout, from the location of sound-making events, to the location of benches, accessible routes and perimeter fencing.

What is in the Design Guide?
1. Introduction: An in-depth overview
2. Guidelines and Laws (page 7) – The assumptions made about the supporting laws, guidelines and context for the Guide.
3. Planning & Preparation (pages 9-12) – Planning is the key to successfully executing a universal playground. Involving the right people in the planning process with the knowledge, skills, empathies and connections needed to succeed may be the most important step you take on the project.

Inclusive playgrounds require people with a variety of skills. Some of the knowledge needed may include:

- An understanding of parks and playgrounds
- An understanding of your community politics and the municipality government
- ADA expertise as well as other federal and local laws surrounding the development of playgrounds
- An understanding of universal design concepts
- Child development theory
- An understanding of the needs of a wide variety of children with disabilities, not just the child you know best
- First-hand experience raising children with and without disabilities
- Knowledge of site development, landscaping, topography, drainage and site materials

Since the site for the playground is the basis for almost everything that will be achieved by the project, engaging a landscape architect who is well versed in inclusive design will be one of your biggest assets.

Each of the people who have this knowledge will make a difference in the project.
4. Layout & Access (pages 13-24): Layout can make the difference between a poor playground and an excellent one. Layout is the biggest single factor between only typically-developing children playing and everyone playing.

Some of the key concepts that will drive good inclusive layout are:

Unitary Surfacing
Although ADA allows loose fill such as engineered wood fiber or rubber pieces to be used in a play ground, (1) it is almost always difficult to move a mobility device across this type of material. (2) When not maintained it can eliminate smooth transition from one type of surfacing to another and (3) parents raising children on Autism Spectrum report that their children will often pick up this material and mouth it.

For these reasons unitary surfacing is strongly recommended over loose fill.

Co-located and Contiguous Play Events
One of the goals of an inclusive playground is to invite engagement between children of diverse abilities. One of the ways to achieve this is to locate equipment of a specific type of play event such as balance or climbing in the same area and adjacent. Spreading out the activities with easy challenges in one location and the more difficult challenges in another will lead to non-inclusive behavior: Children of the same age but different abilities will be divided, perpetuating the separation that occurs in many other areas of their lives.

There are many children who require extra space to maneuver around play events. Children who are using a mobility device need extra space to make turns easily and wheel themselves into proper positions for transfers on to the play event. The extra space will also accommodate the larger bodies of any adult who maybe assisting a child.

Children who are visually impaired use the extra space to ensure that they play independently without entering a fall zone. The extra space also supports children with poor balance, tactile sensitivity, or who have trouble understanding where their body is in space.

No one play item should stand out in the playground—the options should be equally displayed with similar size and importance. (Fiona Robbe – Creative Design Solutions for Everyone)

By making the playground events similar in size, every child has the right to play and that they are being treated with respect and dignity.

Elevated play must have a reward; an amazing view and/or several play activities for everyone. Elevated elements must not dominate an inclusive playground. (Fiona Robbe – Creative Design Solutions for Everyone)

No discussion of inclusive playgrounds would be complete without a discussion on elevated vs. ground level play. Many children with and without disabilities like the experience of height, like being above everyone else. It is exciting, a destination, a sense of achievement. However, there must be a reason to go up high whether it be an amazing view or play activities that everyone can play with. Therefore, the highest slide must be accessible, there must be other activities on the highest platform for a child to do if they do not want or cannot go down the slide. These activities should have a high play value and should be enjoyed by children with and without disabilities.

The “coolest” thing in the playground must be accessible to anyone.

Nothing excludes, separates and creates differences between children more than having the special piece of equipment that everyone wants to play on be inaccessible to some of them. That one activity whether it be the highest slide in the playground, a merry-go-round, a carousel, a unique climbing structure, water play, etc. must be accessible to every person who comes to the playground.

Perimeter or orientation path
Children on the Autism spectrum or who have Sensory Processing Disorder (SPD) will benefit from a spatial arrangement that allows children to move to a safe zone, the orientation path, if their anxiety rises. They will still be able see the activity which may increase their confidence to re-enter the play area.

Two different approaches to the path are:

a) Surrounding the play equipment.
b) As a central spine from which the pods or zones branch out.

Wayfinding
The goal is to enable someone to know where they are within the play environment, where they want to go, and identify the best way for them to get there. Graphics, auditory devices, pathways, colors, and textures can be used throughout the playground to guide children and adults.

One of the key ways to establish Wayfinding is to create an orientation path that surrounds the playground equipment (LA-5). The path is wide (72") so that people can easily pass one another, the edge of the orientation path is marked either with a color change or a texture change to emphasize where the path ends and the play areas begin. The path is free of barriers and is not a part of the play area. Signage can help, but environmental cues with landscaping, size and color of structures, the width of pathways and options offered to the user in the pathway can be powerful communication tools.

Access
In order to play with some pieces of equipment, often panels and musical pieces, a child using a wheelchair will need to wheel themselves next to the panel and then reach out to play with it. The placement of this piece of equipment should take into account the functional ability of the child and the height of a typical wheelchair. The strategies in Reach Ranges (LA-19) will provide ways to ensure that all children can adequately reach the equipment to play with it.

Access also deals with transferring from a mobility device to the deck of a slide. Where will the wheelchair be placed so it is out of the way of other children while its owner is sliding? How the child gets their wheelchair back and how long does it take? Where is the child waiting while their piece of equipment is being returned to them?

5. Play Richness (pages 26-33) - Every child who comes to the playground should be able to play on developmentally and age appropriate equipment. Friends should be able to climb, swing or spin next to one another regardless of their abilities. The Design Guide working group recognizes that depending on the age, size or ability of a child there will be pieces of equipment that they may not choose to, or be able to play on. However, when a few principles are followed the playground will be fun for all children:

- Choose equipment that offers a range of developmental play events.
- Within each type of developmental play event choose a variety of levels of challenge.
- Placement of equipment of one specific type of play event such as balance or climbing should be co-located and contiguous.
- In areas of high activity the number of play events should be limited.
- The placement of the equipment should allow for extra space for mobility.
- There should be high activity areas as well as quiet spaces.
- The “coolest” thing in the playground must be accessible to everyone.
- Every disability is a spectrum. Every child has different abilities. Some children will require a lot of support while playing; others will require significantly less; and others will be able to play independently. To fulfill the needs of everyone on the playground choose multiple pieces of equipment within each category of play events with different challenge levels. For example, for swings, try to have:
  - Toddler swings
  - Adapted swings (in different sizes or types)
  - A tire swing
  - Strap swings
  - A swing a child can lay on

6. Site & Amenities (pages 34-39) - Grouping a series of good-looking play events together will not ensure a good play experience. Similarly, siting the play space along a road in the community that has
some open land is unlikely to be inclusive without further thought about the needs of people who will be visiting.

The support systems can ensure that everyone is welcome. The parent with the service animal will need different amenities than the child who uses a wheelchair. Looking at the play area from the point of view of user and their caregiver will increase the chance of making them feel welcome in the play space.

This section discusses the appropriate support systems for an inclusive playground.

7. **Glossary (pages 40-41)** - An explanation of terms used in the Guide.

8. **Assessment Sheet (page 42)** - Use this to measure inclusivity on existing playgrounds.

9. **Six Steps to Inclusion (Page 43)** - Use these steps when designing a playground to make sure you maximize inclusion.
Meet the Inclusive Play Work Group Members:

JC Boush is a play consultant, head playground designer for Design for Play, and a specialist in child development. He has lectured worldwide, presented several training webinars for Ka-BOOM!, Head Start Body Smart, and Peaceful Playgrounds as well as authored numerous articles and blogs on play, brain development, and children’s play environments.

Cindy Burkhour is a Certified Therapeutic Recreation Specialist and Certified Park and Recreation Professional who has consulted around the country on a variety of recreation issues in the areas of inclusive recreation, universal design and the Americans with Disabilities Act (ADA). She was the director of a community recreation department and coordinator of therapeutic recreation services for a community recreation program. Cindy has taught therapeutic recreation and adapted physical education at several universities in Michigan. Cindy has been active in working with persons with disabilities her entire life. She has a sibling, who has multiple physical and mental impairments and she is also the parent of a child who faces a variety of challenges after experiencing several massive strokes. She advocates professionally and personally for the rights of ALL people to be included in all aspects of community life.

Jim Dziatkowicz, RLA, ASLA, has 17 years experience as a landscape architect within the parks and recreation arena. He assists communities in the planning and design of parks, open recognized leader in his field and has recently been appointed to serve on the Ohio Parks and Recreation Association Board of Directors.

Blake Hobson has served as a playground consultant for more than 18 years. Because of his personal experience raising a severely disabled son, he knows firsthand the frustrations families face when looking for a place for all to play. He specializes in projects where universal design is a priority. Over the past year, Blake has supported two groups of parents in creating beautiful, inclusive parks. Blake has been a Certified Playground Safety Inspector for 12 years.

Christopher Joseph is the director of physical therapy at the Kennedy Krieger Institute. Chris received his master’s degree in physical therapy from Thomas Jefferson University in 1994. He has been practicing in the field of pediatrics for 17 years and has worked in inpatient and outpatient rehabilitation, schools, patients’ homes and in the early intervention field. Chris also has a background in motor learning and motor control in children and brings a unique prospective to the team regarding how children with disabilities move through space.

Mara Kaplan is an educator, a seasoned advocate for inclusive play and a parent of a child with a disability. She has over 17 years’ experience reviewing toys and designing playgrounds. Her firm, Let Kids Play, designs accessible playgrounds, reviews and recommends toys for children with disabilities, and operates the website accessibleplayground.net. Mara is a certified playground safety inspector. Mara also speaks about her journey as parent of a child with severe disabilities as well as universal design, inclusive playgrounds, playgrounds for children with autism, inclusion and other topics.

In conjunction with Ian Proud, Mara facilitated the creation of the Inclusive Play Design Guide and was an active member of the working group that wrote the document. Mara has an elementary education degree from Indiana University in Bloomington, IN and an MBA, with a concentration in nonprofit management, from Boston University.

Carrie Fannin is the founder of the social network Sensory Planet: One Puzzle, Many Pieces. The goal of the network is to bring a positive, purposeful and valuable social network community to those whose lives are affected by Sensory Processing Disorder (SPD). Carrie is also the International Coordinator of SPD Parent Connections for the SPD Foundation. Parent Connections is a grassroots network with active groups in more than 80 U.S. communities and several foreign countries.
The Design Guide stands on the shoulders of other advancements that have been made in the outdoor play industry. The goal of this section is to raise awareness of those developments and standards.

This Design Guide is designed to be used in conjunction with the guidelines and laws that exist to advance inclusion and safety in the playground. Any suggestions made in this guide do not supersede the requirements listed below.

**American with Disabilities Act (ADA)**
ADA is a wide-ranging US civil rights law that prohibits discrimination based on disability. Disability is defined by the ADA as “a physical or mental impairment that substantially limits a major life activity.”

Section 240 of the 2010 Standards provides scoping for play areas, and section 1008 provides technical requirements for play areas. Section 240.1 of the 2010 Standards sets requirements for play areas for children ages 2 and over and covers separate play areas within a site for specific age groups. Section 1008.2.6 of the 2010 Standards provides technical requirements for accessible ground surfaces for play areas on accessible routes, clear floor or ground spaces, and turning spaces.

For more information:
http://www.access-board.gov/

**American Society for Testing and Materials (ASTM)**
ASTM International, formerly known as the American Society for Testing and Materials (ASTM), is a globally recognized leader in the development and delivery of international voluntary consensus standards.

The standards that must be followed for playgrounds are: ASTM F1487-07a - Standard Consumer Safety Performance Specification for Playground Equipment for Public use. As well as ASTM F1292-09 - Standard Specification for Impact Attenuation of Surface Materials within the Use Zone of the Playground Equipment.

For more information:
http://www.astm.org/Standards/F1487.htm
http://www.astm.org/Standards/F1292.htm

**The U.S. Consumer Product Safety Commission (CPSC)**
The CPSC is charged with protecting the public from unreasonable risks of injury or death from thousands of types of consumer products under the agency’s jurisdiction.

Because many factors may affect playground safety, the CPSC staff believes that guidelines, rather than a mandatory rule, are appropriate. These guidelines are not being issued as the sole method to minimize injuries associated with playground equipment. However, the Commission believes that the recommendations in Public Playground Safety Handbook along with the technical information in the ASTM standards for public playgrounds will contribute to greater playground safety.

The Public Playground Safety Handbook can be found at http://www.cpsc.gov/CPSCPUB/PUBS/325.pdf. Assistance on regulations can be gotten from a Certified Playground Safety Inspector (CPSI). The National Parks and Recreation Association (www.nrpa.org) has a registry in order to find a local CPSI.
DEFINITION:
This section will help someone who wants to build an inclusive playground by offering ideas on the community-based work of planning and building an inclusive playground.

INTENT:
To provide a series of options for the process of planning the playground project.

CONTENTS:                  PAGE
PP-1  Planning Committee Membership ......................11
PP-2  Committee Lifespan .........................................11
PP-3  Financial Planning ..........................................11
PP-4  Outreach ..........................................................12
PP-5  Resources .........................................................12
PP-6  Mission & Vision ..............................................12
PP-1  |  PLANNING COMMITTEE MEMBERSHIP

INTENT
A planning committee increases the chances of success by spreading out the responsibilities, increases the
diversity of ideas from which to choose and increases the chances of buy-in by the user groups and the
surrounding community.

STRATEGIES
Include on the committee:
• People in the community with disabilities as well as parents who are raising children with disabilities. There
should be at least one person representing people with: visual impairment, hearing impairment, autism/SPD,
mobility impairment, and cognitive disabilities.
• Accessibility experts
• People from the neighborhood or wider community
• Site professionals such as landscape architects
• Local government officials or employees
• Playground professionals
• The owner/operator of the land
• Other stakeholders. Whose agreement would be desired or needed?
• Parents of typically developed children (include entire community – multigenerational playgrounds)
  Entire family must have something to do.

PP-2  |  COMMITTEE LIFESPAN

INTENT
Ensure continuity during the life of the project.

STRATEGIES
Ensure that the committee stays in place from inception to conclusion

PP-3  |  FINANCIAL PLANNING

INTENT
Ensure that the funds to build the project are raised, managed and spent wisely, and that the long term funding for
maintenance and upkeep is considered before building starts.

STRATEGIES
• Use transparency to increase trust. Trust in the committee’s leaders is an essential component for success.
• Write down and share the fundraising plan.
• Make regular reports on your financial status.
• Contact other playgrounds of the size you are hoping to create. Ask what their annual maintenance costs are.
  Create a plan for your project that makes that amount of money available.
PP-4 | OUTREACH

INTENT
Ensure that stakeholders are recruited to the project, kept informed on project status, involved in the launch, kept informed about events at the play site, and be included in the support community enough to offer their support when that becomes necessary.

STRATEGIES
• Hold public meetings
• Create a community that will ensure that the project is given the time, attention and support it needs to succeed.
• Commit to communication with whatever means necessary.
• Ensure that the stakeholders and surround community are aware of the changes as the project evolves through many iterations. It is extremely important to the project to retain their buy-in, since without that the viability of the project is at risk. Establish communication policies and systems to exchange high quality and quantity information.

PP-5 | RESOURCES

INTENT
People who have no previous experience in an area can achieve wonderful things. However, the selective use of experts can smooth the path, reduce the project timeline and increase project quality.

STRATEGIES
• Hire a landscape architect
• Hire an expert on accessibility

PP-6 | MISSION & VISION

INTENT
Projects drift away from their original objective for several reasons, but loss of focus is one reason. The extent to which the committee’s attention can be focused on the mission will determine the quality and timeliness of the outcome.

STRATEGIES
Define Success
One of the priorities for the group guiding the process is to define what success means for your community. Does success mean that more children are using the playground? Does success mean attracting more dollars spent by regional visitors to the town? Does success mean that specific children can now play outdoors? The answers to such questions will help when deciding between two alternative solutions and serve as a vision statement when introducing new people to the project.

Write a Mission & Vision Statement
A mission statement answers the question “Why does the organization exist?” It defines the fundamental purpose of the group or project.

A vision statement answers the question “What does it look like when we succeed?” A vision is a long-term view, describing how the organization would like the world to be in which it operates.
LAYOUT & ACCESSIBILITY (LA)
This section deals with two interrelated issues:

**Layout:** the placement and relationship of events on the playground and the surrounding environment.

**Accessibility:** The design of the play space and surrounding environment as it relates to the users and caregivers getting into, around, and out of the play area.

**Intent:**
Provide everyone of all abilities inclusive access and the opportunity to move throughout the play space safely and independently.

<table>
<thead>
<tr>
<th><strong>LAYOUT</strong></th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA-1 General Layout</td>
<td>15</td>
</tr>
<tr>
<td>LA-2 Perimeter Containment</td>
<td>15</td>
</tr>
<tr>
<td>LA-3 Entry and Orientation</td>
<td>15</td>
</tr>
<tr>
<td>LA-4 Wayfinding</td>
<td>16</td>
</tr>
<tr>
<td>LA-5 Orientation Path</td>
<td>16</td>
</tr>
<tr>
<td>LA-6 Pods, Rooms, and Zones</td>
<td>17</td>
</tr>
<tr>
<td>LA-7 Color as a Safety and Wayfinding Tool</td>
<td>17</td>
</tr>
<tr>
<td>LA-8 Gathering Spaces</td>
<td>18</td>
</tr>
<tr>
<td>LA-9 Line of Sight</td>
<td>18</td>
</tr>
<tr>
<td>LA-10 Landscaping</td>
<td>19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ACCESSIBILITY</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LA-11 Width of Route</td>
<td>19</td>
</tr>
<tr>
<td>LA-12 Play Surface Slopes</td>
<td>19</td>
</tr>
<tr>
<td>LA-13 Flush Transitions (Surfacing)</td>
<td>20</td>
</tr>
<tr>
<td>LA-14 Unitary Surfacing</td>
<td>20</td>
</tr>
<tr>
<td>LA-15 Placement of Play Equipment</td>
<td>21</td>
</tr>
<tr>
<td>LA-16 Elevated Play</td>
<td>21</td>
</tr>
<tr>
<td>LA-17 Transfer Platforms</td>
<td>22</td>
</tr>
<tr>
<td>LA-18 Transfer Steps</td>
<td>22</td>
</tr>
<tr>
<td>LA-19 Reach Ranges</td>
<td>22</td>
</tr>
<tr>
<td>LA-20 Contiguous or Co-located Play</td>
<td>23</td>
</tr>
<tr>
<td>LA-21 Color of Play equipment</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>OTHER</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LA-22 Public statement of universal design position</td>
<td>24</td>
</tr>
<tr>
<td>LA-23 Signage Visibility</td>
<td>24</td>
</tr>
<tr>
<td>LA-24 Introduction to the Play Space</td>
<td>24</td>
</tr>
<tr>
<td>LA-25 Coolest Play Activity</td>
<td>25</td>
</tr>
<tr>
<td>LA-26 Resting Point Near a Slide</td>
<td>25</td>
</tr>
</tbody>
</table>
LAYOUT

LA-1  |  GENERAL LAYOUT

INTENT
Design the experience in a way that maximizes everyone’s enjoyment of the facility, to ensure safety and independent use, and to encourage play between people of different abilities.

STRATEGIES
• Choose the unitary surfacing that best meets the needs of the users of the playground. Create a clear path starting at the parking lot or other main entry point that provides wayfinding structure and orientation (See LA-4 & 5)
• Create an entry experience for the playspace (See LA-3)
• Develop a wayfinding system to help people find their way through the play space (See LA-4)
• Install perimeter containment (See LA-2)
• Place the entry way in order for users and caregivers to move directly on to the orientation path.
• Arrange play events as a series of rooms, zones or pods around the path. (See LA-6)

LA-2  |  PERIMETER CONTAINMENT

INTENT
Allow children to play freely without the risk that they run into nearby dangers, such as traffic. This becomes particularly important in the case of children on the Autism spectrum who run away from stimulation where in many cases the caregiver has little hope of catching them.

STRATEGIES
Perimeter
Create a perimeter boundary around the entire play space with only one or two entrances. Some of the ways to create perimeters are by using walls, fences, landscaping or topography. Do not use water as part of the perimeter (although water is encouraged in the play area).
The boundary must not be easily climbed.
It must have a few clearly identifiable openings. The location and direction of the orientation path will help identify these openings. The caregiver and a helper can go to those points and watch for their child, knowing they are somewhere in the play space.

Gates
Some inclusive playgrounds choose to put in gates at all the entry ways to ensure completion of the perimeter. The gates need to be designed so as to be inoperable by a child, but can still be operated by an adult using a mobility devises. This ensures that a child cannot leave without adult help.

LA-3  |  ENTRY WAY & ORIENTATION

INTENT
Allow people to orient themselves to the playground without being thrust directly into the excitement of the activities and stimuli. This will be particularly important in the case of a child or caregiver on the Autism spectrum.
This area at the entrance to the playground space should familiarize individuals with play space layout, features, and activities before they arrive in the play space. This will minimize surprises. For some users surprises lead to crises.
Provide on-site signage or web-based information that familiarizes individuals with play space layout, features, and activities prior to the entry of the play space.
STRATEGIES
• As in the foyer of a home or office, this is a space that allows people to find acclimatize to the environment, but before they are engaged in the activities of the residents or business on the premises. This is a good place to welcome people, thank sponsors, set expectations and point out emergency procedures.
• There should be a low level of visual and auditory stimuli.
• The soothing effects of landscaping can be used here to good effect.
• There should be a clear line of sight from the entry way into the play space so a caregiver can quickly identify where a child goes, if they do not stop in the entry way.
• For larger play spaces, provide signage with a plan view of the area and a site key defining individual site features and activities.
• The signage should be located along the entry path and visible prior to entry into the play space itself.
• Provide a tactile map of the area. This could be the same map that is provided for everyone.

LA-4 | WAYFINDING

INTENT
Allow each person to maneuver their way around and through the play space regardless of their cognitive or sensory capabilities.

Create multi-sensory signals in the play space and surrounding environment. This will help children with differing cognitive and sensory systems to be guided through the play space by sight, sound, touch, and body spatial awareness.

According the IDEA Center at the University of Buffalo, “Wayfinding is the organization and communication of our dynamic relationship to space and the environment. Successful design to promote wayfinding allows people to: (1) determine their location within a setting, (2) determine their destination, and (3) develop a plan that will take them from their location to their destination. The design of wayfinding systems should include: (1) identifying and marking spaces, (2) grouping spaces, and (3) linking and organizing spaces through both architectural and graphic means.”

STRATEGIES
• Use signage to direct people to specific spots in the play space such as water fountains or restrooms. Use large letters with contrasting colors as well as picture or universal (non-reader) symbols on the signage. The signage can also have raised letters or braille on them to assist people with visual impairments.
• Use appropriate landscaping features (shrubs or long grass) that offer a texture unique to that area and can guide the child around the play space, allowing for sensory interaction and opportunities to explore
• Use audible orientation clues to help children and parents with vision disabilities. If the playground is large, consider, creating a signature sound for each of the different zones of the play space

LA-5 | ORIENTATION PATH

INTENT
Allow users to survey the play experiences prior to engaging. Allow users to assess the amount of physical and social contact and social contact they can reasonably expect. Provide direction to users through the play space.

STRATEGIES
• As a significant component of the wayfinding scheme includes an orientation path that surrounds the play area. The path should be a firm surface using materials such as asphalt, concrete or pavers.
• Place the path in one of two ways:  
  a) Surround the play equipment.  
  b) As a central spine from which the pods or zones (LA-6) branch from.

• Make the path wide enough (72”) so that two people using mobility devices can easily pass one another.
• It should be free of barriers with a clear line of sight along the path.
• The construction of the path should be consistent throughout the entire play space.
• Delineate where the path ends and the play area begins by providing a visual or tactile cue (e.g. place a bright yellow strip at the edges or change the texture at the edges of the path).

LA-6 | PODS, ROOMS, AND ZONES

INTENT
Divide the larger playground into areas that allow for division of one type of play from another. Some examples might be: vigorous play from quiet play, areas catering to the needs of young children from those areas focused on older children.

Many of the goals discussed in Play Richness are best achieved through separation into play pods.

STRATEGIES
• Locate distinct play pods off the orientation path.
• The pods can be defined through a path, landscaping, or the equipment itself.
• Determine the number of pods and their relative size by dividing the desired activities and equipment into the categories discussed in Play Richness; quiet vs. loud play; younger vs. older play.

LA-7 | COLOR AS A SAFETY AND WAYFINDING TOOL

INTENT
Color can be an important tool in communication as applied to wayfinding and safety.

STRATEGIES
• Modular systems: Changes of height can be dangerous. Perception of those changes can be accentuated by changing the deck color at each height change.
• Surfacing: Use two different colors of surfacing material; one color within the fall zones and one color outside the fall zone. This will help a child to determine where the danger to them may be greatest.
• Red, yellow, green color schemes: Color schemes that are related to culturally accepted communication norms such as traffic lights can help set expectations of safety/activity levels. If these schemes are used in surfacing or signage could be designed to communicate safe, care required, and relative safe places. Example: the area in front of a swing might be colored red.

LA-8 | GATHERING SPACES

INTENT
Allow the community to use the playground as a meeting point. This builds community spirit and reinforces the role of the playground as a community resource.

Using the play space as a community resource and gathering place increases support for the facility, increasing the potential for fundraising and resistance to budget cuts that may target resources not seen as widely endorsed.

STRATEGIES
• Incorporate gazebos and pavilions in places where parents can see their children but can socialize with their peers.
• Use seating, grouping of play equipment (eg. boulders), or other landscaping techniques to create gathering places throughout the play space.
• Shade these gathering places to increase the chances of extended use in hot weather.

LA-9 | LINE OF SIGHT

INTENT
Allow a caregiver to know the location of their child within the playground.

There may be many play zones within the playground. The line of sight across each play pod or zone (see LA-6) should allow a caregiver to find their child easily.

STRATEGIES
• Minimize the use of large equipment that does not have holes through which a child is visible on the other side.
• Place modular systems toward the rear of the playspace.
• Improve line of sight significantly by breaking the space into pods (LA-6) that can be supervised individually. Line of sight is significantly improved if the space is broken into pods that can be supervised individually.
• Place seating around the entire area.
• Emphasize freestanding independent items over consolidated modular structures. These do not inherently guarantee visibility, but are usually less opaque than a modular structure.
• Lay out the events in such a way as to maximize visibility across the structures.
**LA-10 | LANDSCAPING**

**INTENT**
Use landscaping: to soften the look and feel of the playground, help define the pods, zones or rooms where the play equipment is located, and to create shade.

**STRATEGIES**
- Use a landscape architect with experience in inclusive play environments to develop a complete landscape design for the space.
- Try to see what the space will look like when it is planted, ten years afterward and all the time in between. At any time in this growth cycle, the landscaping should not block routes or impede people with disabilities.
- Make sure that the landscaping materials do not include poisonous materials that children could put in their mouths. While the landscaping plan should include a variety to textures, do not use any material that has thorns or any other texture that might hurt someone running into it.

**ACCESSIBILITY**

**LA-11 | WIDTH OF ROUTES**

**INTENT**
Build accessible routes throughout the play space. On that route allow wheelchair users, parent with strollers, and/or children who do not like to be touched, enough room to pass each other while using the play space. However, the playground can help children grow beyond their limitations, so a mixture of passage widths within the play-space will provide choice and play richness.

This criterion is intended to extend the ADA guidelines in this area.

Entry and exit onto all accessible routes must be 60” (ADA). A 72” width allows two wheelchairs to pass each other and is therefore recommended.

**STRATEGIES**
- Consider the play environment as a small city. Which routes need to be arteries that connect one side of the city to another? Which ones have less priority? Which areas are the equivalent of sleepy, quiet neighborhoods where a highway would destroy the intent?
- The available room in front of play components should optimally allow a person in a wheelchair and their ambulatory companion to play adjacent to one another.

**NOTE** Review the ADA sections that discuss accessible routes:  
Chapter 4 - Outside the play space  
Chapter 10 - Section 1008.2 – Within the play space.

**LA-12 | PLAY SURFACE SLOPES**

**INTENT**
Surfaces shall be as level as possible to allow everyone to move throughout the play space with ease, without tiring, and avoiding the risk of tipping or being pulled accidentally into play equipment.
STRATEGIES

• Ramp runs connecting ground level play components shall have a running slope not steeper than 1:16.
• Consider the space for each play pod, zone or room to be essentially flat when conceptualizing the design. The accessible routes that connect these sections must comply with ADA laws.
• Specify the play space slope requirement in all contractor documents and drawings.
• Use a digital level to measure the finished product in order to ensure compliance with the design documents.

LA-13 | FLUSH TRANSITIONS (SURFACING)

INTENT
Allow people using mobility devices to move freely by providing flush transitions to all areas of the play space and surrounding area.

STRATEGIES

• Transitions must be flush between all route surfaces and play surface access points.
• Play surface connections must have tight seams throughout the play space. There should be no barriers between sections of play space that would impede a user of a mobility device.
• To ensure this occurs:
  • Perform an accurate topographic survey.
  • Write the requirements in the bid/contract documents.
  • Hold contractor accountable by monitoring execution.
  • Transitions between surfaces often indicate the end of one contractor’s work and the beginning of the work of another. The quality of the communication between contractors will be a major determinant in the quality of the transition.

LA-14 | UNITARY SURFACING

INTENT
The impact attenuation surface is the surfacing that surrounds the playground equipment. Although ADA allows loose fill such as engineered wood fiber or rubber pieces to be used in an ADA compliant playground, (1) it is almost always difficult to move a mobility device across this type of material. (2) When not maintained it can eliminate smooth transition from one type of surfacing to another and (3) Parents raising children on the Autism Spectrum report that their children will often pick up this material and mouth it.
For these reasons unitary surfacing is highly recommended.

STRATEGIES
Pour-in-place, tiles, playground turf, and some hybrid surfacing are considered unitary surfacing for the purpose of this guide.
In order to ensure that your playground has the best surfacing for your site and climate, it is recommended that the playground planning committee:
• Visit various playgrounds in your area with different surfaces. Ask the owners of the playgrounds how the surfacing has worked and how much maintenance has had to be done.
• Meet with multiple vendors of different type of surfacing. Ask them about warranties and expected life of the surfacing. Ask who does the installation; whether they are certified by the manufacturer, and how much experience they have with this product.

• Check that the surfacing has IPEMA Certification by visiting www.ipema.org

**NOTE ON HEAD INJURIES**

• Playground surfaces are tested for Head Injury Criterion (HIC) and G-max according ASTM F1292-09. The performance criteria used to determine conformance with the requirements of this specification are: A G-max score not exceeding 200g and an HIC score not exceeding 1,000. Impact attention can change significantly as the surface ages. In order to achieve this important safety performance during the life of the playground surface, the surface when installed will need to exceed (be lower than) the scores mentioned above.

• Prior to purchase of your playground surface ask the surfacing provider to test a local reference to determine the HIC and G-max scores of an existing installation.

• To ensure this require your surface provider to perform onsite testing prior to payment of the surface installation. The surface should be tested by a qualified Impact Tester using a TRIAX approved head form testing unit.

---

**LA-15 | PLACEMENT OF PLAY EQUIPMENT**

**INTENT**

Ensure that investments of time and resources in building the playground are used to maximum benefit. Conscious, thoughtful decisions about the locations of each event and the relationships between them from the point of view of the most challenged among us can lead to an experience for everyone that changes the play experience for the better.

**STRATEGIES**

• As described in LA-6, divide the equipment into smaller areas often called pods, zones or rooms

• No one play item should stand out in the playground—options should be equally displayed with similar size and importance

• If using a modular play system, place it in the back or corner of the play space. This minimizes the amount of the play space that a child can be in and not be seen.

• The coolest thing in the playground needs to be accessible to all. This minimizes the inequalities created when only certain group can use the special play events.

• Create a sitting space at the end of climbers and slides to enable a child to wait while another person retrieves their mobility device.

---

**LA-16 | ELEVATED PLAY**

**INTENT**

Provide the opportunity to go high for children who enjoy that experience.

**STRATEGIES**

• There must be a reason to go up high. It could be an amazing view or play activities that are unique.

• The highest slide must be accessible via a ramp system.

• When not using a ramped system, the topography of the land can be used to create a hill above the playground where children could go up and look down on everyone else playing.
LA-17 | TRANSFER PLATFORMS

**INTENT**
Allow a person who is using a mobility device to transfer into and out of that device independently. Smaller children use wheelchairs in which the seating surface is lower than the older child’s chair. This means transfer platforms on the play equipment need to be designed for the age group using the equipment. A child who is unable to use their legs proficiently may be able to move themselves around the playground if transfers in and out of the chair can be made easily.

**STRATEGIES**
- **Transfer platform heights:**
  - Age 2-5: 16-18"
  - Age 5-12: 18-20"
  Based on optional transfer heights for children of these ages.
- Make sure the surface on which a child may sit is within the range for their age as above.
- Consider all the surfaces adjacent to the accessible route. Estimate the possibility of a playground user transferring to them from a chair.
- Look at how a child who is using a chair might transfer to the events that don’t have a platform per se. Is there a surface or grip point that can help this child be included?
- When considering the room a child will need when sitting: A 6 yr old will occupy 3’ 2” sitting with their legs out in front of them. A 10 yr old will need 3’ 8.5”
- Provide on-deck transfers that facilitate movement from a mobility device onto the play activity. This is especially important at slides.
- Provide a place at the end of the slide for a child to wait in a seated position until their chair can be brought to them.

LA-18 | TRANSFER STEPS

**INTENT**
Allow someone who does not have use of their legs to be able to move their body between elevation changes on the play equipment and back into a mobility device.

**STRATEGIES**
- If someone is moving themselves on their backside, the smaller the change in height between elevation between decks or play surfaces, the better. For this reason, the following step heights are recommended in order of preference.
  - a) 4”
  - b) 6”
  - c) 8”
- Talk to playground manufacturer representatives about their ability to ramp the elevation change or break down the height change into manageable increments.

LA-19 | REACH RANGES

**INTENT**
All children should be able to interact with the play events, wayfinding signage and surrounding tactile input, with their hands. A child’s functional ability may be more of a determinant than their age of what they can touch and manipulate in the play environment.
STRATEGIES
The following strategies are based on the functional ability of the child of a certain age range. The Gross Motor Function Classification System (GMFCS) is used to generate standards for accessibility measurements.

6 Year Old – Level III:
Assumption: 6 years of age and in the 50th percentile for height and weight. Children sit on a regular chair but may require pelvic or trunk support to maximize hand function. Children move in and out of their chair sitting using a stable surface to push on or pull up with their arms. Children walk with a hand-held mobility device on level surfaces and climb stairs with assistance from an adult. Children frequently are transported when traveling for long distances or outdoors on uneven terrain.

10 Year Old – Level III:
Assumption: Children walk using a hand-held mobility device in most indoor settings. When seated, children may require a seat belt for pelvic alignment and balance. Sit-to-stand and floor-to-stand transfers require physical assistance of a person or support surface. When traveling long distances, children use some form of wheeled mobility. Children may walk up and down stairs holding onto a railing with supervision or physical assistance. Limitations in walking may necessitate adaptations to enable participation in physical activities and sports including self-propelling a manual wheelchair or powered mobility.

Assumptions and appropriate reach ranges

<table>
<thead>
<tr>
<th></th>
<th>6 yr old</th>
<th>10 yr old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper reach range (to each side)</td>
<td>38.3&quot;</td>
<td>43.5&quot;</td>
</tr>
<tr>
<td>Lower reach range (to each side)</td>
<td>19.4&quot;</td>
<td>21.1&quot;</td>
</tr>
</tbody>
</table>

LA-20 | CONTIGUOUS OR CO-LOCATED PLAY

INTENT
If similar play events designed to be used by children of the same age cannot be attached to each other (contiguous), they should be adjacent (co-located) in the same area of the playground.

Play equipment challenges should be graduated to include abilities.

Contiguous play increases the possibility of contact and play between children of different abilities.

STRATEGIES
As described in Play Richness, there should be two or more things that do the same thing such as climbing, spinning, or swinging, at different challenge levels.

Contiguous  Co-located
OTHER

LA-21 | COLOR OF PLAY EQUIPMENT

INTENT
Color is a stimulating input to the human brain. Adults tend to assume that brighter colors suggest a playful atmosphere, and the more the better. That may or may not be true for children and adults who process information in a typical way. It is not true for people with Sensory Processing Disorder, Autism or Visual Perception issues. Color can also be used to provide contrast to enable children with low vision to determine where steps are.

STRATEGIES
• The main playground equipment should be a muted tone, not primary colors. Colors such as camouflage, beige, tan, brown, dark blue, dark green, grey, light blue, white (any color within white pallet).
• The finish should be matte rather than gloss.
• Accent pieces can be accent colors if the organizing committee is interested in adding more color.
• The decks and steps (as much as possible) should have alternating colors to delineate where a child should step. People with low vision see yellow the best.

LA-22 | PUBLIC STATEMENT OF INCLUSIVE PLAY

INTENT
Educate the public about universal design at a local level. Make a clear statement to the community about the goals of the playground.

STRATEGIES
• A sign at the entrance of the park which explains the purpose of the playground.
• Audio button that is pushed to receive information about the playground.
• Signage at each station that explains how and why to use the equipment. The heights should accommodate children, adults and meets ADA signage requirements.

LA-23 | SIGNAGE VISIBILITY

INTENT
Allow signage to be legible to all readers.

STRATEGIES
• Review ADA signage rules.
• Text is large enough to read from the expected viewing distance (see ADA requirements).
• Surfaces are free from glare from the expected viewing location.
• Make alternatives to text available, e.g. audible and/or tactile modes. Volume adjustment provided for audible displays. Device triggers audible information by proximity.

LA-24 | INTRODUCTION TO THE PLAY SPACE

INTENT
Allow parents to work with their child prior to leaving home to understand the layout, play equipment, and overall play space. This type of preparation makes it much easier for a child on the Autism spectrum to go to a new place.

STRATEGIES
• Create a website for the playground.
• Offer orientation materials to prepare a child for their visit: a video, a virtual map, a printable map.
• Develop flashcards that can be printed out of the different areas so that a child can point to where they want to go.
• It is assumed that additional technology will evolve to create new ways to prepare a child for their visit.
LA-25 | COOLEST PLAY ACTIVITY

**INTENT**
Ensure that “the coolest” play activity is accessible and usable for all.

**STRATEGIES:**
Examine the play activities chosen for the playground. Identify the one that will create the most excitement from children. Ensure that this piece can be played on by the vast majority of people. For example:
- Ensure that the most exciting slide has ramps leading to it and the ability to easily transfer
- A web net that is easy to use at the ground level and then more advanced as it goes up.
- A wheelchair accessible glider
- Water play that enables a child to control when they engage with the sensation, and access for all has been considered.

LA-26 | RESTING POINT NEAR A SLIDE

**INTENT**
Provide a resting point for a person who uses a wheelchair while their mobility device is being retrieved they exit a slide.

**STRATEGIES:**
- Place a seat with back support at the edge of the use zone for the slide. This keeps the child safe, preserves their dignity, and reduces the amount of distance they need to be carried.
- Create a place to sit as a part of the end of the slide, ensuring that the result is in compliance with CPSC guideline 5.3.6.4 and ASTM 1487 section 9.6.
**PLAY RICHNESS (PR)**

**DEFINITION:**
The quantity, quality, diversity and inter-relationships of play events on the playground.

**INTENT:**
Provide a rich, inclusive play space where children of all abilities can grow and learn through physical, emotional, sensory, and social experiences.

**RECOMMENDED:**
At least one activity of each of the following types of play must be provided. One piece of equipment, can meet the requirement for multiple types of play. For example, a tire swing could be used for both spinning and swinging.

<table>
<thead>
<tr>
<th>PHYSICAL</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR-1  Spinning</td>
<td>27</td>
</tr>
<tr>
<td>PR-2  Sliding</td>
<td>27</td>
</tr>
<tr>
<td>PR-3  Rocking</td>
<td>27</td>
</tr>
<tr>
<td>PR-4  Swinging</td>
<td>27</td>
</tr>
<tr>
<td>PR-5  Climbing, Crawling &amp; Strengthening</td>
<td>28</td>
</tr>
<tr>
<td>PR-6  Balancing</td>
<td>29</td>
</tr>
<tr>
<td>PR-7  Jumping and Bouncing</td>
<td>29</td>
</tr>
<tr>
<td>PR-8  Movement Experienced From a Wheelchair</td>
<td>29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SENSORY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PR-9  Tactile</td>
<td>29</td>
</tr>
<tr>
<td>PR-10 Auditory</td>
<td>30</td>
</tr>
<tr>
<td>PR-11 Visual</td>
<td>30</td>
</tr>
<tr>
<td>PR-12 Interaction with Natural Features</td>
<td>31</td>
</tr>
<tr>
<td>PR-13 Cozy Places</td>
<td>31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOCIAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PR-14 Cooperative Play</td>
<td>31</td>
</tr>
<tr>
<td>PR-15 Social Interaction</td>
<td>31</td>
</tr>
<tr>
<td>PR-16 Dramatic &amp; Imaginative Play</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GUIDING PRINCIPALS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PR-17 Rich Play Experiences at all Heights</td>
<td>32</td>
</tr>
<tr>
<td>PR-18 Multiple Levels of Challenge</td>
<td>32</td>
</tr>
</tbody>
</table>
PHYSICAL

PR-1 | SPINNING

INTENT
Challenge, stimulate, and develop the user’s vestibular system by providing activities which turn their body in a rotary motion. When children spin, different parts of the brain are stimulated simultaneously. This builds new and more developed pathways throughout the brain – pathways that improve learning potential, spatial awareness, rhythm and more. Spinning activities develop the brain in such a way that pre-reading skills and concepts are advanced while improving balance, muscle control and gross motor skills.

STRATEGIES
• Choose at least one piece of equipment that will enable a child to spin in each of these positions: standing, sitting, and lying. A tire swing would meet two of these positions: a child could sit on it or lay on it.
• Provide challenge by choosing spinning equipment with hand holds and without hand holds.
• Provide a foundation for a child by choosing spinning equipment where a child can support themselves by having multiple touch points.

PR-2 | SLIDING

INTENT
Offer the experience of a modified fall through space and the thrill of perceived risk while stimulating the user’s vestibular system and sense of balance.

STRATEGIES
• Provide slides at a variety of heights. For example: 2’, 4’, 6’.
• Include at least one slide that carries two people side-by-side.
• Provide a wide slide so that a parent can support a child going down the slide.
• Choose different types of slides: Roller, tube, textured, curved, straight, hill, spiral, etc.
• Have one slide that does not create static electricity for people with a cochlear implant.
• Provide a place for the disabled person to sit while their chair is being retrieved.
• The tallest slide should be accessible.

PR-3 | ROCKING

INTENT
Challenge and develop the user’s vestibular system by moving his/her body in a rocking motion.

STRATEGIES
• Include at least one piece of equipment that provides a to-and-fro motion and one that provides side-to-side motion.
• Include a piece of rocking equipment for each of these positions: sit, stand and lay down. One piece of equipment could provide multiple experiences. A child could sit or lay on a spring rocker.
• Include at least one rocking piece of equipment that is for individual play and another intended for multiple children.

PR-4 | SWINGING

INTENT
Challenge, stimulate, and develop user’s vestibular system by providing various swinging events.
STRATEGIES
- Provide a swing that moves in a linear motion and a swing that moves in a circular motion.
- Provide an adaptive swing with harness and other types of adaptive swings.
- Consider a variety of swings and swing sizes. For example: belt swing, toddler swing, tire swing. A bird nest swing provides a full body experience and physical support when a child lays on it.

PR-5 | CLIMBING, CRAWLING & STRENGTHENING

INTENT
1. Challenge, stimulate, and develop the user’s proprioceptive system by providing activities that allow for the contraction and stretching of muscles as well as the bending, straightening, pulling and compression of the joints.
2. Improve motor skills such as power balance, coordination, strength, and dexterity.

STRATEGIES
Crawling
Provide at least two (2) events that allow a child to attempt different challenge levels.

Level I: A short tunnel placed on the ground.
Level II: A longer tunnel on the ground, or elevated with accessible routes on either side.
Level III: A tunnel that changes elevations.

Arm Strengthening
Provide at least two challenge levels of overhead events or other arm strengthening equipment. If an overhead event is included on the playground, a Level I event must be included.

Level I: An arm strengthening activity that is at ground level and can be used by a person in a wheelchair. Example: A chinning bar or overhead event appropriately located, an accessible sand digger
Level II: A static overhead event where the rungs are close together, entry on to the equipment is simple, and an obvious path exists to follow from beginning to end.
Level III: A very challenging overhead event which may include all or some of these characteristics: high off the ground, require long reaches, it moves, and the path from the beginning to end can be modified requiring higher levels of motor planning.

Climbing
Provide at least two challenge levels for climbing. If an overhead event is selected, a Level I event must be included.

Level I: A combination of any of the following characteristics: low to the ground, low slope, hand holds on each side, the ability to put the entire body on the climbing event to provide more support, the path a child takes from bottom to top (or across) the climber must be obvious. Example: level to the ground web net, a ladder with hand holds, low boulder, stairs with hand holds.
Level II: A combination of any of the following characteristics: can be angled, there must be at least one way to support the body (put the full body on it, one hand hold), there can be multiple paths to reach the top, but they must be obvious, first step is easy to reach, the steps are evenly spaced. Example: Angled rock wall, medium size boulder with good hand or foot support, a straight up climber with even steps and good hand or foot supports, a curved climber with even steps where the entire body can be on it for support.
Level III: A combination of any of the following characteristics: reaches a high place, is vertical, can have a complicated or multi-way path to reach the top, supports are minimal or not obvious, is dynamic, requires great agility to accomplish. Level III climbers are ones normally used for the oldest children. Example: large boulder with limited supports, web net, vertical rock wall.
PR-6 | BALANCING

INTENT
Provide a wide variety of activities that increase a user’s ability to balance on their feet (dynamic balance), and build core body strength.

STRATEGIES
• Provide one balancing activity where a child can use one hand to help support their body as well as one balancing activity where the child can use both hands.
• Provide at least one balancing activity for each of the following positions: sitting and standing. One piece of equipment could meet both criteria. Example: a stool could be sat or stood on.
• Provide a piece of balancing equipment that is static and another one that is dynamic.
• Incorporate challenge by choosing balancing activities of varying widths.
• Provide a balancing activity at ground level and one balancing activity that is elevated and reached by an accessible route.

PR-7 | JUMPING AND BOUNCING

INTENT
Challenge, stimulate, and develop the user’s vestibular system and proprioceptive system by jumping or bouncing activity.

STRATEGIES
Provide at least one jumping or bouncing activity that is used sitting as well as one activity used standing. This could be the same piece of equipment.

PR-8 | MOVEMENT EXPERIENCED FROM A MOBILITY DEVICE

INTENT
Enable an individual using a wheelchair to experience a motion that stimulates their vestibular system without leaving their chair.

STRATEGIES
Provide a piece of equipment that moves the child and their wheelchair. The piece of equipment should be a social experience i.e. more than one person can play on it at a time. Example: gliders, merry-go-rounds, and carousels designed to meet this intent.

SENSORY

PR-9 | TACTILE EXPERIENCES

INTENT
Provide events in the play space that exercise and develop the user’s sense of touch.

STRATEGIES
• Provide the opportunity for a child to feel at least one of each of the following textures.
  1. Smooth — The material is free from projections or unevenness of surface. Example: a metal pole, metal slide, mirrors, marbles.
2. **Soft** — The material is yielding readily to touch or pressure. Example: grass, rubber components of rope climbers.

3. **Hard** — The material is solid and firm to the touch; unyielding to pressure and impenetrable. Example: rocks, plastic play equipment.

4. **Rough** — The material is coarse. It has projections, irregularities, or breaks. Example: boulders or rocks, rope.

5. **Grainy** — The material has a granular texture. Example: sand, dirt, rocks or boulders (natural or concrete).

6. **Uneven** — Bumpy, not level or flat. Example: a slide that has bumps built in, outside of a tunnel, plastic decoration that sticks out from the base of a piece of equipment.

- Provide one opportunity for a child to have his full body involved in the activity. Example: roll down a hill, put sand all over themselves, use a roller slide, water play where the entire body gets wet.
- Provide one opportunity for playing with loose and/or liquid materials. Example: sand, dirt, water, gravel, rice.

**PR-10 | AUDITORY**

**INTENT**
Include events in the play space that assist the development of the auditory system.

**STRATEGIES**
- Provide pieces of equipment that create sound or enable a person to hear another person talking from a distance.
- Use different ways to generate sound.
- Choose a piece of equipment where the child creates a sound by activating a piece of equipment, Example: pushes a button and a sound comes out or hits a drum.
- Child creates a sound and then hears sound repeat. Example: talking tubes or items that echo.
- Choose equipment that generates a sound. Example: by walking across or entering an area a sound is created.

**Note:** Care must be taken to locate these activities such that families can interact or remove themselves as needed.

**PR-11 | VISUAL SENSORY SYSTEM**

**INTENT**
Include events in the play space that assist development of sight and the visual sensory process.

Visual processing refers to a group of skills used for interpreting and understanding visual information. Here are just a few things that the visual system deals with:
- Seeing something and remembering what was seen. The sense of sight involves the brain and visual recognition.
- Writing information accurately.
- Moving the eyes in a specific direction with or without distraction; tracking things with the eyes.
- Strengthening of the eye muscles
- Focusing on an object.
- Seeing the differences between objects that are similar but not identical.
STRATEGIES
Most of the strategies that can help children improve their visual sensory system have already been addressed in other areas of the Play Richness section: swinging, spinning, balancing, using complex textures that resemble nature (artificial grass, trees and rocks).

If play panels are used in the play space, choose ones that will help develop the visual system. Example: tracing or tracking, looking at a picture and then recalling what it is, looking at a partial picture and have to determine what the whole picture is, games that involve matching.

NOTE: A developmental optometrist is a good resource for selecting appropriate activities.

PR-12 | INTERACTION WITH NATURAL FEATURES

INTENT
Engage children in nature to enable understanding and knowledge of this resource with wide-ranging benefits.

STRATEGIES
- Include thoughtfully placed landscaping throughout the play space. Refer to LA-10.
- Add a sensory garden to the play space.
- Install raised planters.
- Add items found in a nature playground such as logs, rocks, water, hills, etc.

PR-13 | COZY PLACES

INTENT
Provide a place on the playground where a child may go to calm themselves.

STRATEGIES
Provide at least one location within the play space where a child can go and feel alone. The place should feel to the child that he is enclosed, but the play piece must enable the caregiver to see the child. Example: an area under the play structure, a piece of equipment a child can go into, a nature area where tall plants or vines provide quiet, a playhouse, a tunnel with a window.

SOCIAL

PR-14 | COOPERATIVE PLAY

INTENT
Ensure that children learn how to play with each other. To teach skills required for cooperation.

STRATEGIES
Provide a piece of equipment that requires two or more people to operate it. Example: seesaw.

PR-15 | SOCIAL INTERACTION

INTENT
Encourage and enable social interaction and eye contact between children while playing on the playground.

STRATEGIES
Include built features, equipment or space that encourages interaction while playing with others. Example: basketball hoops, tether ball, seesaws, hopscotch, four square, groupings of seats in close proximity, water features, electronic games designed to be used by multiple players.
PR-16 | DRAMATIC & IMAGINATIVE PLAY

INTENT
Provide opportunities for children to create play “themes” and act them out by participating in various roles that are spontaneous, child-initiated, and open-ended.

Expand a child’s awareness of self in relation to others and their social environment by providing dramatic play opportunities.

Provide opportunities through dramatic play for children to learn language, cognitive and social skills.

STRATEGIES
• Provide a space that fosters dramatic play opportunities within the play space. The space allows children to create dramatic play experiences through the use of a mixture of abstract and realistic play events. Example: Themed structures, a stage, a playhouse made of natural materials.
• Utilize playspaces under the equipment or somewhere on the play structure for dramatic and imagery play. If it is on the structure, it must be on an accessible route. If it is under the play structure, an additional space must be provided.
• Provide a space where children to gather to plan and create their dramatic play.
• Provide children with opportunities to create varied individual and group dramatic play episodes throughout the play space and assist them in understanding the world around them through their play experiences.
• Use dramatic play panels above and below play decks, independent of the composite play structure that allow children to create dramatic play experiences that are based on the real world around them and on their own imagination.
• Use representations of real world activities and experiences, both abstract and realistic that are designed to create real world experiences that may be used by an individual or group of children.
• Create small semi-private spaces that encourage dramatic play by an individual or group of children.
• Use various play equipment that allows children to experience movement or stillness during their dramatic play.

GUIDING PRINCIPALS

PR-17 | RICH PLAY EXPERIENCES AT ALL HEIGHTS

INTENT
Encourage the play experiences available for a user at each height to have depth and breadth.

STRATEGIES
Include at each platform along the ramp circuit at least one activity for all children to do besides using the slide or going down a climber. Ensure that the activities are placed at heights that accommodate different reach ranges (LA-19). At each platform along the ramp circuit there must be at least one activity for all children to do beside using the slide or going down a climber. Example: periscopes, talking tubes, music or other auditory activity, pulley systems to send things up and down, activity panels that encourage more than one child to play with it at a time.

PR-18 | MULTIPLE LEVELS OF CHALLENGE

INTENT
Choose play activities that provide graduated levels of challenge to ensure that all ages and abilities are actively engaged on the playground.

STRATEGIES
• For each type of equipment, choose pieces that would enable 5 year olds, 7 year olds, and 12 year olds to actively play.
• Place the equipment together as described in LA-20
• Create patterns on the surfacing to create a play event for the easiest challenge; for the most difficult challenge choose equipment that requires a high level of motor planning.
SITE AND AMENITIES (SA)

This section discusses the support systems and the built environment surrounding the play space to maximize inclusion.

**INTENT:**
Provide supportive infrastructure and amenities that are inclusive, safe, and easy to use by people of all abilities. Design a playground with inclusive comfort facilities and ensure inclusion throughout the site and play environment. Some of the concepts in this section are from the Global Universal Design Commission, who is currently developing UD voluntary consensus standards for commercial buildings. For more information visit www.globaluniversaldesign.com.

<table>
<thead>
<tr>
<th>CONTENTS:</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA-1  Seating</td>
<td>35</td>
</tr>
<tr>
<td>SA-2  Restrooms</td>
<td>35</td>
</tr>
<tr>
<td>SA-3  Drinking fountains</td>
<td>35</td>
</tr>
<tr>
<td>SA-4  Picnic tables</td>
<td>36</td>
</tr>
<tr>
<td>SA-5  Parking</td>
<td>36</td>
</tr>
<tr>
<td>SA-6  Trash cans</td>
<td>36</td>
</tr>
<tr>
<td>SA-7  Line of sight</td>
<td>37</td>
</tr>
<tr>
<td>SA-8  Shade</td>
<td>37</td>
</tr>
<tr>
<td>SA-9  Cooling devices</td>
<td>37</td>
</tr>
<tr>
<td>SA-10 Service animals</td>
<td>38</td>
</tr>
<tr>
<td>SA-11 Emergencies</td>
<td>38</td>
</tr>
<tr>
<td>SA-12 Public transit</td>
<td>38</td>
</tr>
</tbody>
</table>
SA-1 | SEATING

INTENT
Provide a variety of types of seats for caregivers and children of all abilities to rest in proximity to one another and to the play space.

STRATEGIES
• Allow space next to a bench for a wheelchair to pull up to it.
• Orient the seating for the best vantage points for caregivers to supervise children during play.
• Install a seating area in each play area.
• Strategically place play equipment that can be used for caregivers to sit on.
• Include benches with and without arm rests.
• Include some benches with armrests on one end for people who are typically developing, but open on the other end to allow someone in a wheelchair to transfer.
• Locate seating so the user is protected from wind and provide thermal comfort in all seasons on a universal route.
• Use lightweight, movable furniture where local security allows.
• Ensure that seating and tables in each area accommodates a wide range of statures, mobility levels and perceptual abilities.

SA-2 | RESTROOMS

INTENT
To provide toilet facilities for all members of a family.

STRATEGIES
• Build a permanently installed structure that is plumbed into local sewage, water and electrical systems.
• Comply with ADA regulations as a bare minimum.
• Include a family restroom that has a changing table capable of accommodating an adult body.

SA-3 | DRINKING FOUNTAINS

INTENT
To allow everyone at the playground the ability to drink water while they are there.

STRATEGIES
• Include at least two different heights of fountains.
• Utilize water fountains that turn on when the unit senses someone within its perimeter.
• Provide a facility for filling up personal water containers.
SA-4 | PICNIC TABLES

**INTENT**
To allow everyone to eat and feel included in the activities. Too frequently wheelchair spaces are in sub-optimal locations.

**STRATEGIES**
- Use accessible picnic tables positioned so that the open space for the wheelchairs are looking out in different directions.
- Choose tables where more than one person using a wheelchair can pull up.
- Choose seating and tables in each area that accommodate a wide range of statures, mobility levels and perceptual abilities.
- Include child-sized picnic tables with wheelchair places.

SA-5 | PARKING

**INTENT**
Ensure that parking spaces are provided for people who need their vehicle to be close to the play events as well as provide a safe parking lot.

**STRATEGIES**
- Exceed the spacing between van parking by 20% greater than the local standards. Meet or exceed all other local standards in regard to parking.
- Provide accessible parking spaces close to the play area. This does not mean that the whole parking area needs to be located nearby. For site design or aesthetic reasons the accessible parking spaces may need to be separated from and closer to the playspace than the rest of the parking area.
- Install seating in the designated loading and waiting areas.
- Separate vehicular travel routes from pedestrian routes in the parking lot.
- Protected pedestrian routes/islands are provided (Example: landscaped area with a sidewalk.)
- Provide temporary loading/unloading area for buses near the primary entrance or designated entrance for tour buses.
- Provide a designated parking area for buses, RVs, and other larger vehicles away from primary entrances.
- Separate areas for different transportation modes (e.g. automobiles, transit, rickshaws/pedicycles)

SA-6 | TRASH CANS

**INTENT**
Make waste receptacles convenient to use by everyone.

**STRATEGIES**
- Ensure that receptacles can be used with only one hand. Example: open tops, slots, and push doors
- Provide receptacle covers operated by motion detectors.
- Receptacles should be on an accessible route.
- Trash cans should not be located within eating areas, but placed at exits of each area.
• Do not locate trashcan in clear spaces next to benches, since those spaces may be needed for people in wheelchairs in order to be close to people on the bench.

**SA-7 | LINE OF SIGHT**

**INTENT**
Maximize parental supervision of the children using the playground. This is particularly important when children who have a tendency to become over-stimulated run from the source of the stimulation and possibly away from the caregiver. It is also important when a caregiver is responsible for multiple children of different ages.

A caregiver needs to be able to stand at almost all points on the playground orientation path and be able to tell if there is a child using almost all the play events on the site. That doesn’t mean they see the whole child or be able to identify the child, but they should be able to tell if someone is there.

**STRATEGIES**
• Minimize the use of large opaque plastic pieces that will obstruct vision.
• Emphasize freestanding independent items over consolidated modular structures, since the first tends to be less opaque than the second.
• Enable the caregiver to view both the exit and entrance to the play area or in larger playgrounds at least the section in which they are playing.

**SA-8 | SHADE**

**INTENT**
Provide spaces within the playground where a child is not in direct sunlight. Adults and children with sun allergies and those susceptible to sun poisoning are not able to go to standard playgrounds where shade is not provided.

**STRATEGIES**
• Use established shade trees.
• Use a freestanding fabric shade structure.
• Utilize fabric structures on top of the equipment.
• Consider shading some of the seating or gathering areas.

**NOTE:** the shade provided by a new tree will be very different than that provided by that same tree in 10+ years.

**SA-9 | COOLING DEVICES**

**INTENT**
Allow children of all abilities to cool down.

**STRATEGIES**
• A water feature that is usable by a child or adult regardless of their mobility device. Example: water misters that are not part of a structure as it can create a risk or slipping, water spray pad.
### SA-10 | SERVICE ANIMALS

**INTENT**
Allow children and adults who depend on a service animal to use the play space.

**STRATEGIES**
- Include signs that prohibit curbing service animals without collecting and disposing of waste and provide for appropriate wast disposal.
- Include a designated area on site provided for animal care, ensuring that it is on a universal route.
- Provide water trough or basin for use by pets and service animals.

### SA-11 | EMERGENCIES

**INTENT**
Enable the people at the play space to reach emergency services. Not everyone has a cell phone, and in the event of a parent becoming ill the child may not know how to find it or use it if the parent does have one.

**STRATEGIES**
- Include emergency call boxes. Ensure that they are clearly marked and are usable for someone using a wheelchair.

### SA-12 | ALTERNATIVE TRANSPORTATION

**INTENT**
Allow people who cannot drive or do not have a car to use the playground.

**STRATEGIES**
- Locate transit stops near primary entrances. Provide route and scheduling information in both print and audible modes.
- Place transit stops separate from other vehicular loading and unloading zones in front of playground entrance.
- Provide a protected area (from weather and other obstacles) that accommodates at least one personal wheeled mobility device.
- Provide bike racks near the primary entrance for those patrons who wish to bike to the play space.
GLOSSARY

ACCESSIBLE ROUTE An ADA term referring to the route within the boundary of the site which provides from public transportation stops, accessible parking, accessible passenger loading zones, and public streets or sidewalks to the play activity. The accessible route shall, to the maximum extent feasible, coincide with the route for the general public.

AUTISM SPECTRUM DISORDER Autism, part of a group of disorders known as autism spectrum disorders (ASD), is a complex neurobiological disorder that typically lasts throughout a person’s lifetime. The disorder is characterized by varying degrees of impairment in communication skills and social abilities, and also by repetitive behaviors. Symptoms range from mild to severe.

FLUSH TRANSITION The relationship between two sections of flooring materials. ‘Flush’ means there should be no height difference between the two sections. In reality, there will be a difference and it may be measurable. Acceptability can be defined by quantifying what this difference should not exceed. Smaller wheels on mobility devices will have more problems than larger wheels when moving across a non-flush transition.

GROSS MOTOR FUNCTION CLASSIFICATION SYSTEM (GMFCS) A five level classification system that describes the gross motor function of children and youth with cerebral palsy on the basis of their self-initiated movement with particular emphasis on sitting, walking, and wheeled mobility. Distinctions between levels are based on functional abilities, the need for assistive technology, including hand-held mobility devices (walkers, crutches, or canes) or wheeled mobility, and to a much lesser extent, quality of movement.

INCLUSIVE The ability to include everyone, regardless of physical or psychological situation.

LOCOMOTOR SKILLS Motor skills in which the feet move the body from one place to another. They are (roughly in order of how children learn them): walking, running, hopping, jumping, skipping, galloping, sliding (a sideways gallop), leaping.

MOBILITY DEVICES A mobility device is a mechanism such as a wheelchair, a transfer chair (also called a convertible or stretcher chair), a sling lift, a sit-to-stand lift, a hoist, or calipers, designed to aid individuals with mobility impairments. They can be either be powered or manually operated.

MOTOR PLANNING Motor planning or praxis is the ability of the brain to conceive, organize, and carry out a sequence of unfamiliar actions. In the playground this would include climbing an unfamiliar activity that does not have consistent, predictable steps.

MULTIPLE TOUCH POINTS The number of points that a child makes contact with the play activity or ground surface. If a child is hopping on one leg they have one touch point, while crawling they have four, etc.

PERCEPTUAL-MOTOR SKILLS The muscles cannot work in isolation. They are in constant contact with the brain and visual sensory system to ensure the action is doing what is required. Gross motor skill requires controlled movement of most, if not all, of the body to perform a task. Fine motor skill is the ability to manipulate small and delicate objects. Children develop most of their gross motor skills, such as moving arms and legs, before accomplishing fine motor skills like writing. Both are essential to the growth and development of children.

PROPRIOCEPTIVE SENSORY SYSTEM The proprioceptive system consists of sensory information caused by contraction and stretching of muscles and by bending, straightening, pulling and compression of the joints between the bones. Because there are so many muscles and joints in the body, the proprioceptive system is almost as large as the tactile system. Most proprioceptive input is processed in areas of the brain that do not produce conscious awareness. Without good automatic responses, such things as eye-hand coordination is very difficult.

SENSORY PROCESSING DISORDER (SPD) Formerly known as “sensory integration dysfunction” is a condition that exists when sensory signals don’t get organized into appropriate responses. Pioneering occupational therapist and neuroscientist A. Jean Ayres, PhD, likened SPD to a neurological “traffic jam” that prevents certain parts of the brain from receiving the information needed to interpret sensory information correctly. A person with SPD finds it difficult to process and act upon information received through the senses, which creates challenges in performing countless everyday tasks. Motor clumsiness, behavioral problems, anxiety, depression, school failure, and other impacts may result if the disorder is not treated effectively.
SENSORY PROCESSING DISORDER  Sensory processing (sometimes called “sensory integration” or SI) is a term that refers to the way the nervous system receives messages from the senses and turns them into appropriate motor and behavioral responses. Whether you are biting into a hamburger, riding a bicycle, or reading a book, your successful completion of the activity requires processing sensation or “sensory integration.”

SPATIAL AWARENESS  A well thought-out awareness of things in the space around us. It also deals with the awareness of our body’s position in space. Without having spatial awareness, we would not be able to turn the page of a book. Without spatial awareness, we would not be able to drink from a cup. Enhanced spatial awareness plays a crucial role in sports and games.

VESTIBULAR SYSTEM  The vestibular system is the sensory system that responds to the position of the head in relation to gravity and accelerated or decelerated movement. There are two types of vestibular receptors in the inner ear in a structure called the labyrinth. One type of receptor responds to the force of gravity. The other type of receptors are in the semicircular canals in the ear. These canals are responsible for our sense of movement. The vestibular system is a unifying system. All other types of sensation are processed in reference to this basic vestibular information.

Notes
## Inclusive Play Assessment Sheet

Use this sheet to assess existing playgrounds. Find the Design Guide number in the Inclusive Play Design Guide for more information on each concept.

<table>
<thead>
<tr>
<th>Design Guide #</th>
<th>Concept</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA-5</td>
<td>Parking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA-3</td>
<td>Entry experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA-14</td>
<td>Unitary surfacing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA-13</td>
<td>Flush Transitions (Surfacing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA-4</td>
<td>Wayfinding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA-6</td>
<td>Pods, Rooms, and Zones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA-11</td>
<td>Open pathways to equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA-20</td>
<td>Multiple levels of challenge for each activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Continuous/Co-located)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PR-17</td>
<td>Activities for everyone at the highest platform</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PR-3</td>
<td>Cozy places</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA-1</td>
<td>Seating for people in wheelchairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA-8</td>
<td>Shade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA-5</td>
<td>Orientation path</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LA-2</td>
<td>Perimeter boundary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PR</td>
<td>At least one sensory, one physical, and one social activity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Go to PlayworldSystems.com/Inclusive to download this sheet.

Six Steps to Inclusion

1) Plan
Build a planning committee from people in the community. Include members of any group expected to use the playground, or whose buy-in will be required.

2) Layout the Playground
Create an entry experience for the playspace. Design an orientation path that surrounds the play area. Arrange play events as a series of rooms, zones or pods around the path. Make some of the rooms active and some quiet. Place the entry way in such a way for users and caregivers to move directly on to the orientation path.

3) Elevated vs. Ground Level Play
Determine how much you want. Elevated play must have a reward: an amazing view and/or several play activities for everyone. Elevated elements should not dominate an inclusive playground.

4) The Cool Piece
Pick the piece of equipment that will be the most sought after on the playground, ensuring that everyone can play on that piece.

5) Choose Equipment
Offer a variety of experiences. For example: swinging, jumping, imaginative play, climbing, and nature play, etc. For each type of play event choose a variety of levels of challenge. Group these play events together so anyone who wants to experience a certain type of play is playing with others of regardless of age, size or ability.

6) Add Support Amenities
To make the playground enjoyable. Add shade, benches with backs, water fountains, picnic tables, and landscaping.