



Bensalem Township: Imagination Land **Playground Inclusivity Report**

Consultant: Will Hemler

General Recreation, Inc.

Common Language

The following summarizes unique terms that may appear within this report so that the reader has a mutual understanding of the terminology and its meaning.

Sensory Processing	The ability to organize sensory information coming from all parts of our body and the environment, in order to use it effectively. We take in sensory input from eight different sensory systems, and then organize and use that information to respond. This usually occurs automatically without conscious thought. Some individuals may seek out specific sensory experiences, or may be under or over responsive to different sensory experiences.
Proprioception	The sense of where our body is in space, or our body awareness. We receive input to our joints and muscles through pushing, pulling, or hanging. It allows us to gauge how much force we need to use or what direction our body needs to go in and is important for learning new motor tasks.
Vestibular	Simply put, our sense of balance and where we are in space. This sense lets our body know which direction we are moving and how fast.
Motor Planning	The ability to complete a novel task including the ability to organize actions; knowing what steps to take and in what order to complete a motor task. It involves processing and using various sensory input.

Project Overview

Bensalem Township is seeking an inclusive playground design to replace an existing structure at the Imagination Land Playground. Pictured is the intended design, which includes areas for children ages 2 to 5 and children ages 5 to 12. This design has an immense amount of unique pieces and features that create an inclusive environment. Specific design highlights and inclusive benefits are discussed on the following pages.



Developmental Benefits & Inclusive Highlights

The chart below summarizes the various developmental benefits of the playground as a whole, and also highlights specific features that elevate the overall inclusivity of the playground.

Developmental Benefits & Inclusive Highlights			
Sensory Systems	Motor Skills (Fine & Gross)	Cognitive and Social Skills	Inclusive Highlights
- Vestibular Input, including rotary and linear - Tactile Input and Exploration - Proprioceptive Input - Visual Input - Auditory Input, including self-generated via musical instruments	- Dynamic Balance - Coordination - Motor Planning - Upper Body Strength - Lower Body Strength - Core Strength and Stability - Eye-Hand Coordination/Visual Motor Skills - Fine Motor Skills (pinching, grasping, pulling, manipulating) - Strength and Cardiovascular Endurance - Bilateral Coordination	- Cooperation between peers - Imaginary Play - Meaningful, yet playful, learning experiences - Problem-Solving (individual and shared) - Strategic thinking and planning - Development of Social Skills, Communication	- Symbol/picture communication board to support communication; multimodal - Poured-in-place rubber surfacing for ease of access and increased safety; includes a contrasting 'pathway' that links equipment together and supports wayfinding - Multiple ways to climb the central structure (Super Netplex®), including an accessible belt climber, allowing children to choose appropriate level of risk for their abilities - Cozy dome for regulation and calming, placed within the area - Shade structures included within the area for those with temperature sensitivities - We-Go-Round is wheelchair accessible without requiring a transfer, as the platform being level with the ground surface - Numerous pieces of equipment feature added core support such as the We-Saw and bucket swings

Inclusive Highlights & Key Points

Super Netplex® Structure:

- The main climbing-based structure featured in the design offers a unique full-body climbing experience where children can use their hands and feet to climb, working on full-body strength and coordination while also providing proprioceptive input.
- This provides the opportunity for gross motor play, proprioceptive input, and motor planning. Individuals who seek intense sensory experiences may prefer to climb to the top for a sense of height.
- The structure includes a belt climber which provides a climbing experience for children who may be gravitationally insecure via a wider base of support and allows children to climb in a way that suits their abilities, such as crawling.
- The belt climber provides an accessible climb, allowing those who utilize mobility supports, such as a wheelchair, to transfer to the belt, climb in a way that suits their needs, and experience the structure's full height. Places to rest are featured along the ascent, to support endurance.



Additional Inclusive Equipment Features:

- Multiple pieces of equipment have a backrest, which offers additional stability for those who require core support.
 - The We-Saw™ (pictured right) includes a transfer area as well as seats that have a backrest for additional core support.
 - A molded bucket seat both in the swing area and on the ZipKrooz® allows users of various abilities to access the equipment and play alongside peers.
- The We-Go-Round® (pictured right) offers easy access for those with mobility devices including wheelchairs, as the entry platform is at ground level
- Play Panels are featured at the ground level which increases the accessibility for those who use mobility supports or individuals who may have gravitational insecurity. The panels include interactive components and provide various types of sensory stimulation such as:
 - Tactile stimulation via the Marble Panel®
 - Visual-auditory stimulation via the Rain Sound Wheel Panel™
 - Auditory input via the music center, placed near the main playground area, which includes Rhapsody® instruments (metallophone, cascata bells, and tongue drum).



- The Cozy Dome creates a calm, quiet retreat ideal for those who may become overstimulated but would like to remain near their peers in the playground area.

Additional Amenities that Support Inclusivity:

- Poured-in-Place Rubber Surfacing:
 - This choice in surfacing offers a uniform ground surface that is free of loose pieces/particles that could impede an individual's ability to maneuver throughout the playground. This provides increased accessibility for those who use mobility supports such as a wheelchair or walker. It is also beneficial to individuals across the lifespan, such as grandparents who may be supervising children. The surfacing also offers a slight rebound which offers increased joint protection to those who may be accessing the playground.
 - Contrasting colors are used to connect various components together while also supporting wayfinding for those who may benefit from cognitive or visual supports. Research also supports linking equipment or features in a circular pattern (Fernelius & Christensen, 2017)
- Shade and Cooling Areas:
 - Cooling mist supports those who may be sensitive to heat or those who may have difficulty regulating their body temperature, and provides a unique tactile experience with the feeling of a light mist.
 - Multiple shade structures are present.
- Symbol Communication Sign
 - The symbol communication sign is located by an entry point that allows users to communicate via symbol/picture icons. This is both helpful for those who may use augmentative and alternative communication (AAC), or for users who may be over-stimulated/dysregulated as it allows them to utilize visuals instead of needing to access spoken words.

Reference:

Fernelius, C.L. & Christensen, K.M. (2017). Systematic review of evidence-based practices for inclusive playground design. *Children, Youth and Environments*, 27(3), 78-102.

Summary

Overall, this playground design will significantly update the existing space and will provide a universally-designed setting for all users to have a fun and impactful play experience. A wide range of important developmental areas are targeted including numerous sensory systems, fine motor skills, gross motor skills, cognitive skills, and social skills. The play structures and spaces allow for individuals to meet their needs in various ways; selecting the 'just right' challenge for them. A wide array of sensory experiences are provided through the selected equipment and include opportunities for vestibular input, proprioceptive input, tactile input, auditory input, and visual input. Extensive opportunities for active, gross motor play exist within multiple areas of the play space, providing experiences for those who prefer more active play such as climbing or balancing. Additional features further support the inclusivity of the playground including symbol/picture communication board to support multimodal communication, poured-in-place rubber surfacing for ease of access and increased safety, opportunities to select graded levels of challenge/risk, cozy spaces for regulation, and equipment that features added core support and ease of transfer. These key features take this playground beyond the standard ADA recommendations and further elevate the inclusivity. As a whole, this unique playground will provide an inclusive play experience for all visitors, and endless play for all.

Appendices

The following pages include the individual Developmental Benefit sheets from Landscape Structures in alphabetical order.

- 1) Cozy Dome®
- 2) Curva® Spinner
- 3) Marble Panel®
- 4) Molded Bucket Seat (swing)
- 5) Rain Sound Wheel Panel™
- 6) Rhapsody® Animato Metallophone
- 7) Rhapsody® Cascata Bells
- 8) Rhapsody® Tongue Drum
- 9) Super Netplex®
- 10) Symbol Communication Sign
- 11) We-Go-Round®
- 12) We-Saw™
- 13) ZipKrooz® Assisted
- 14) ZipKrooz®



This report was prepared by Marla Davis, OTD, OTR/L
Occupational therapist and owner of *Play for All Consulting*
playforallconsulting@gmail.com

Cozy Dome[®]



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Vestibular Proprioception Tactile	Balance, Coordination, Flexibility, Core, Upper & Lower Body Strength, Motor Planning	Problem Solving	Cooperation Social Skill Development Imaginative Play

The Cozy Dome is a unique climber that is the perfect mix of a fun climber and a cozy place for children to escape to observe others playing. It has round openings for hand and foot placement for climbing. These openings also provide good line of sight for parents who want to keep track of their children hiding within.

Curva™ Spinner



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Vestibular+ Proprioception Tactile	Agility, Balance, Coordination, Flexibility, Motor Planning, Core, Lower & Upper Body Strength	Problem Solving	Cooperation Social Skill Development Imaginative Play

The Curva™ Spinner provides children with a fun way to spin and rotate alone or together. It allows them to use their arms and legs muscles to play with the forces of gravity to give their vestibular system a playful spin.

Marble Panel®



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Visual Proprioception Tactile Auditory	Eye-Hand Coordination Fine Motor Motor Planning	Problem Solving Strategic Thinking	Cooperation Social Skill Development Imaginative Play

The Marble Panel encourages children to explore numbers, colors and light. Children can roll the marbles within the panel to engage their sense of touch, hearing and vision while they play with the marbles.

Molded Bucket Seat with Harness Swing



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Vestibular + Proprioception Tactile Visual	Balance, Coordination, Motor Planning, Core, Upper & Lower Body Strength	Problem Solving	Cooperation Social Skill Development Imaginative Play

The vestibular system has opportunities for development through the swings found on the playground. Swing structures often include a variety of swings so that children can find their “just right” swing. The Molded Bucket Seat Swing with Harness provides additional supports for children who might need additional trunk support while they swing. It also provides older children with a more intensive swinging experience due to the weight of the swing.

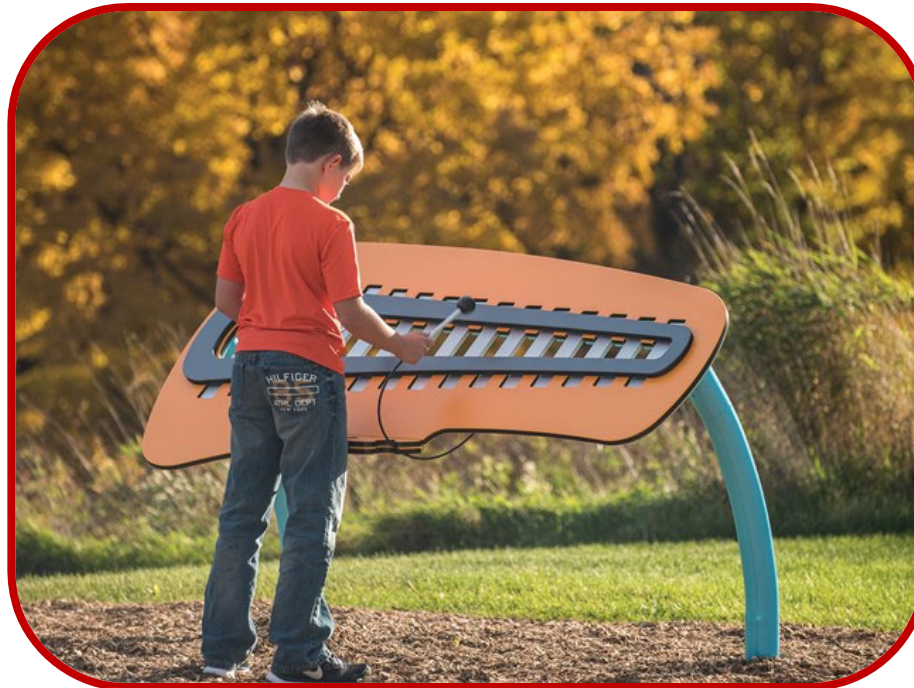
Rain Sound Wheel Panel™



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Proprioception Tactile Auditory Visual	Eye-Hand Coordination Fine Motor Motor Planning	Problem Solving Strategic Thinking	Cooperation Social Skill Development Imaginative Play

The Rain Sound Wheel Panel encourages children to explore how their rotation of the rain wheel impacts the sounds that they hear from the wheel. This helps children understand how their actions can change sounds from the panel. The sound of rain wheel is calming to some children with sensory processing disorders.

Rhapsody® Animato® Metallophone



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Auditory Tactile Proprioception Visual	Eye-Hand Coordination Fine Motor Motor Planning	Problem Solving Strategic Thinking	Cooperation Social Skill Development Imaginative Play

The Rhapsody Animato Metallophone has a full range of notes that children can play to create any song in their imagination. The arched design of the chimes allows for easy roll-up access for those using wheelchairs. Children who get overwhelmed with all the activity on the playground might find playing this instrument very calming providing a fun way to take a break so that they can head back out to play.

Rhapsody® Cascata Bells



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Auditory Tactile Proprioception Visual	Eye-Hand Coordination Fine Motor Motor Planning	Problem Solving Strategic Thinking	Cooperation Social Skill Development Imaginative Play

The Rhapsody® Cascata Bells provide children with a cascade of bells with calming tones. Children can explore these bells alone or with friends. Children who get overwhelmed with all the activity on the playground might find playing this instrument very calming providing a fun way to take a break so that they can head back out to play.

Rhapsody® Tongue Drum Junior



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Auditory Tactile Proprioception Visual	Eye-Hand Coordination Fine Motor Motor Planning	Problem Solving Strategic Thinking	Cooperation Social Skill Development Imaginative Play

The Rhapsody Tongue Drum Junior provides children with a fun drum experience. The drum comes in junior size ensuring that younger children can reach this drum. Children can explore this drum alone or with friends. The arched design of the drum allows for easy roll-up access for those using wheelchairs

Super Netplex® 12' Tower



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Vestibular + Proprioception Tactile Visual	Agility, Balance, Coordination, Endurance, Eye-Hand Coordination, Flexibility, Motor Planning, Fine Motor, Core, Lower & Upper Body Strength	Problem Solving Strategic Thinking	Cooperation Social Skill Development Imaginative Play

The Super Netplex Climber challenges children to constantly respond to their own movements as well as the movement of other children climbing on the net. This improves their balance, flexibility and motor coordination. The subtle movements of the net help build overall core trunk muscle strength. Children are challenged to climb in an infinite number of ways as they move up, down and all around this unique net climber. A variety of different climbers can be used in the interior to provide access for all to the upper levels.

Symbol Communication Sign



Sensory Systems Engaged

Auditory
Tactile
Visual

Motor Skills

Eye-hand Coordination

Cognitive Skills

Problem Solving

Social Skills

Cooperation
Imaginative Play
Social Skill Development

This Symbol Communication Sign is designed to provide children who use Augmentative and Alternative Communication (AAC) systems with a way to communicate to their friends how they would like to play on the playground. Symbols include activities, playground components, feelings, as well as letters and numbers so that children can quickly share what they would like to do and where they would like to play with their friends. This sign incorporates good color contrast for those with low vision. It may be located at the entry to the playground or at several locations on larger playgrounds to enhance communication during play.

We-Go-Round®



Sensory Systems Engaged

Vestibular +
Proprioception

Motor Skills

Balance
Core, Lower & Upper Body Strength

Cognitive Skills

Problem Solving

Social Skills

Cooperation
Social Skill Development
Imaginative Play

The We-Go-Round® is a merry-go-round that invites everyone to spin! It is designed so that children using wheeled mobility devices can wheel right in and enjoy the rotation that comes from a merry-go-round experience. All riders can contribute to the spinning of the We-Go-Round by using the center post wheel. Alternatively, children can create spin by pushing from the outside of the structure. The design encourages social play by all children as riders and pushers cooperate to make this a fun vestibular experience for every child. Those pushing get to work on motor planning and coordination through the engagement of the proprioceptive receptors in their muscles and joints.

We-Saw™



Sensory Systems Engaged

Vestibular +
Proprioception

Motor Skills

Balance
Flexibility
Core, Lower & Upper Body Strength

Cognitive Skills

Problem Solving

Social Skills

Cooperation
Social Skill Development
Imaginative Play

The We-Saw™ provides children with movement up and down in space. Children can find the “just right” movement experience by sitting in the molded seats or on the center platform. Both seating options provide varying degrees of support that can be used as children need or want to engage in movement. The design allows for two children or a group of children to join in the We-Saw experience. The seats are large enough to accommodate teens and adults, allowing the experience to become a true group hangout. Regardless of the number of riders on the We-Saw, all will get to experience a fun vestibular experience in the presence of friends.

ZipKrooz® Assisted



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Vestibular + Tactile Proprioception	Agility, Coordination, Upper & Core Body Strength, Motor Planning,	Problem Solving	Cooperation Social Skill Development

The ZipKrooz Assist provides every child with the chance to fly! The design allows children to experience fast linear movement from one end of the structure to the other. The Assist version includes a molded bucket seat with harness that gives every child a secure seating option to experience the ride. When combined with the ZipKrooz; these tracks combine to create a social element to the flying experience. Children can choose to race each other or develop imaginary games and scenarios as they ride side by side.

ZipKrooz®



Sensory Systems Engaged	Motor Skills	Cognitive Skills	Social Skills
Vestibular + Tactile Proprioception	Agility, Coordination, Motor Planning, Core, Lower & Upper Body Strength	Problem Solving	Cooperation Social Skill Development Imaginative Play

The ZipKrooz provides every child with the chance to fly! The design allows children to experience fast linear movement from one end of the structure to the other. The pod seat provides a challenging seating option for those who want to really work their core muscles as they fly through space. When combined with the ZipKrooz Assist; these tracks combine to create a social element to the flying experience. Children can choose to race each other or develop imaginary games and scenarios as they ride side by side.