

Designing Garden Spaces for Youth with Autism Spectrum Disorder

According to a 2018 study, autism spectrum disorder (ASD) now impacts 1 in 40 children in the United States ([Kogan et al., 2018](#)). ASD is attributed to a combination of environmental and genetic factors. According to the National Institute of Mental Health, ASD is considered to be a developmental disorder because its symptoms usually appear within the first two years of life. The disorder manifests itself differently in each child, although it is commonly displayed as difficulties in communication and social interaction, sensory challenges (ranging from being hypersensitive to hyposensitive to environmental stimuli), and unexplained repetitive behaviors. These challenges can cause frustration and anxiety for the child. However, when correctly identified, purposeful therapeutic interventions show great promise in helping children with ASD reach their fullest potential. Therapeutic engagement with gardening and garden-based activities is one type of intervention currently being explored for children and youth with ASD. Some benefits that garden programs may offer that address these challenges include:



Seating options. Photo courtesy of Robin Bradley.

- In an organized and protective natural setting, children can explore calming and alerting sensory experiences such as different colors, textures, smells, and sounds. Gardens can be designed to provide opportunities for those who are hyposensitive to sensation without being over-stimulating to those who are hypersensitive.
- Gardening provides opportunities for children to hone gross and fine motor skills. For example, planting seeds and harvesting tomatoes involves the fingers and hands, so are fine motor activities. Digging holes using a shovel rather than a trowel involves the larger muscles of the arms and legs and is a gross motor activity.
- Gardening is, by its nature, a repetitive activity. Yet, it still offers challenge by providing constant change. You can establish a comforting routine (gather needed tools, check on the plants, pull a few weeds, water, etc.), but there will be subtle changes to engage the child's curiosity with each visit, such as looking for ripening tomatoes, finding new insects to observe, flower buds opening, and leaves changing colors.
- Gardening is an activity that can be shared. There are many opportunities for positive social interaction and teamwork and to practice communication skills such as a planning and carrying out group planting and weeding days.
- Gardening allows for solitude and reflection while being immersed in the comfort and beauty of nature.

At the 2018 American Horticultural Society's National Children and Youth Garden Symposium, KidsGardening staff had the privilege of attending a presentation about the creation of The [Els Center of Excellence Sensory Arts Garden](#) in Jupiter, Florida, by David Kamp and Dr. Amy Wagenfeld (a map and photos of the garden can be downloaded by clicking on the link above). It is specifically designed to be appropriate for those with ASD and to appeal to the general public through its plantings, network of pathways, and appropriate hardscape and water features. The overarching goals of the garden are to help visitors connect with nature, reduce stress levels, regulate the senses, and encourage social connection for children attending the charter schools and their teachers, and for those who come to the

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campus to participate in the many other social, educational, and sporting activities and facilities located at The Els Center of Excellence. The general-public also enjoys the garden and it has even been host to graduations and a wedding. Although a garden of this scale is not practical for all educational institutions, David and Amy provided an abundance of design tips to consider when planning a garden space for youth with ASD. Here are a few of their suggestions:

- **Be mindful of light.**
Many youth with ASD are sensitive to light. Both entrances that the students use to access the garden offer covered spaces (one with a porch and the other with a trellis) so that there is a transition of light from between being indoors and outdoors. Hedges along the outside of the garden block sunlight from being reflected off cars in the parking lot and shaded spots are provided throughout the garden. Ground lighting allows for evening events and classes to be held in the garden.
- **Create a comfortable circulation in the space.**
The garden is designed to be seen in its entirety from the entry points and allow visitors the opportunity to pause and determine their destination when entering the garden, thus providing them with a sense of comfort in the space. The whole garden is designed to offer a series of garden "rooms" and although each is different, this repeated pattern offers some predictability so the youth know what to expect.
- **Select plants carefully.**
All plants in the landscape are well-adapted to the environment to ease maintenance and are nontoxic. In the center of the garden is a series of raised beds filled with plantings, each representing one of the five senses.
- **Offer the opportunity for choice.**
The design team used a variety of different types of ground surfaces, plant materials, and seating areas to engage the senses and provide visitors with many different opportunities to explore and interact with both their environment and other students in multiple ways and on their terms.

Some other cool features of the garden include a porch swing sitting area, musical instruments that the students can move around the garden, and two water globes. Tinted paving reduces glare and paving color changes denote different spaces and provide structure in the garden. Two grassy areas are home to 'tree stump' tables and seats for small group activities or for students to do classwork with a teacher. Group classes such as music and yoga happen in another grassy area. Seating tucked away under the great gumbo limbo tree provides reprieve from stimulation and serenity in thought. Most recently, a water wall was installed that is hugely popular.

Students visit the Sensory Arts Garden daily and explore the space at their own pace without structured activities. Garden designer Amy Wagenfeld passed along this comment she received from a parent: "My son loves the swing in the one of the Places Away nook spaces in the garden so much, we bought one for him to enjoy at home as well. One of his rewards for working in his classroom is to go out into the Sensory Garden for a break – he always makes a beeline for the swing."

For additional design recommendations for designing a garden for children and youth with ASD and to learn more about ASD, check out the following resources:

Kogan, Michael D. et al. (2018). The prevalence of parent-reported autism spectrum disorder among US children. *Pediatrics*, 142(6).

Lipscomb, Micah and Alexander Stewart. *Analysis of Therapeutic Gardens for Children with Autism Spectrum Disorders*. Perkins + Will Research Journal. 6(2): 41-56, 2014.

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https://br.perkinswill.com/sites/default/files/ID%205_PWRJ_Vol0602_04_Analysis%20of%20Therapeutic%20Gardens.pdf

Hebert, Bonnie. Design Guidelines of a Therapeutic Garden for Autistic Children. Louisiana State University Masters Thesis, 2003.

https://digitalcommons.lsu.edu/cgi/viewcontent.cgi?article=4287&context=gradschool_theses

Sachs, Naomi and Tara Vincenta. *Outdoor Environments for Children with Autism and Special Needs*. Implications: 9 (1): 1-8, 2011

https://www.informedesign.org/_news/april_v09-p.pdf

Winterbottom, Daniel and Wagenfeld, Amy. (2015). *Therapeutic Gardens: Design for Healing Spaces*. Portland, OR: Timber Press.

http://www.timberpress.com/books/therapeutic_gardens/winterbottom/9781604694420

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