

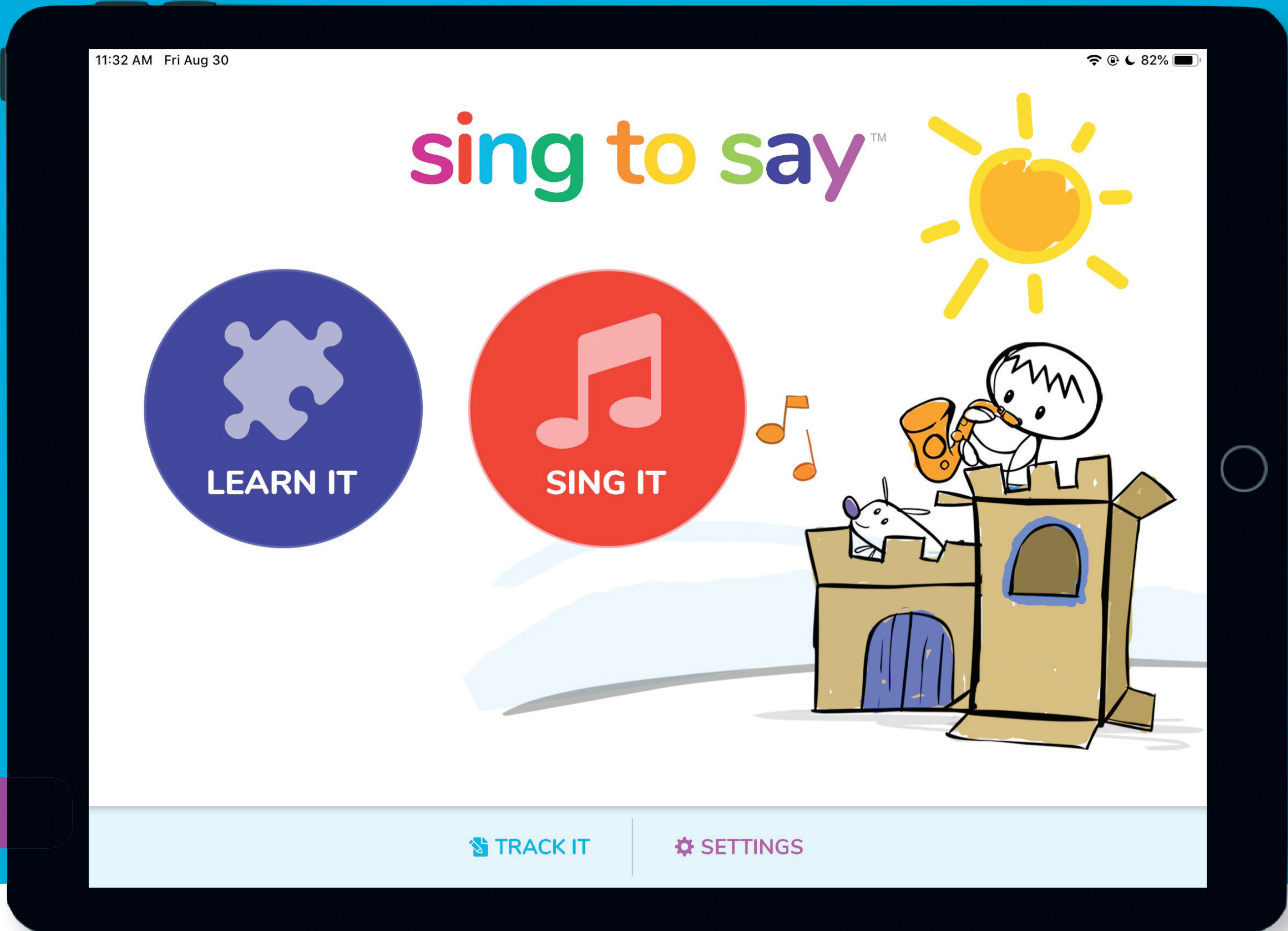
Music and animation to facilitate the acquisition of language for children with autism

Research indicates that music and language are acquired in different parts of the brain.

For children with autism, the language centers are impaired but the music centers are usually not.

Sing to Say is an application for the iPad that uses music to bridge to the language centers.

Beta version in the Apple App Store. French and Spanish coming soon.



Approaches to Language Acquisition

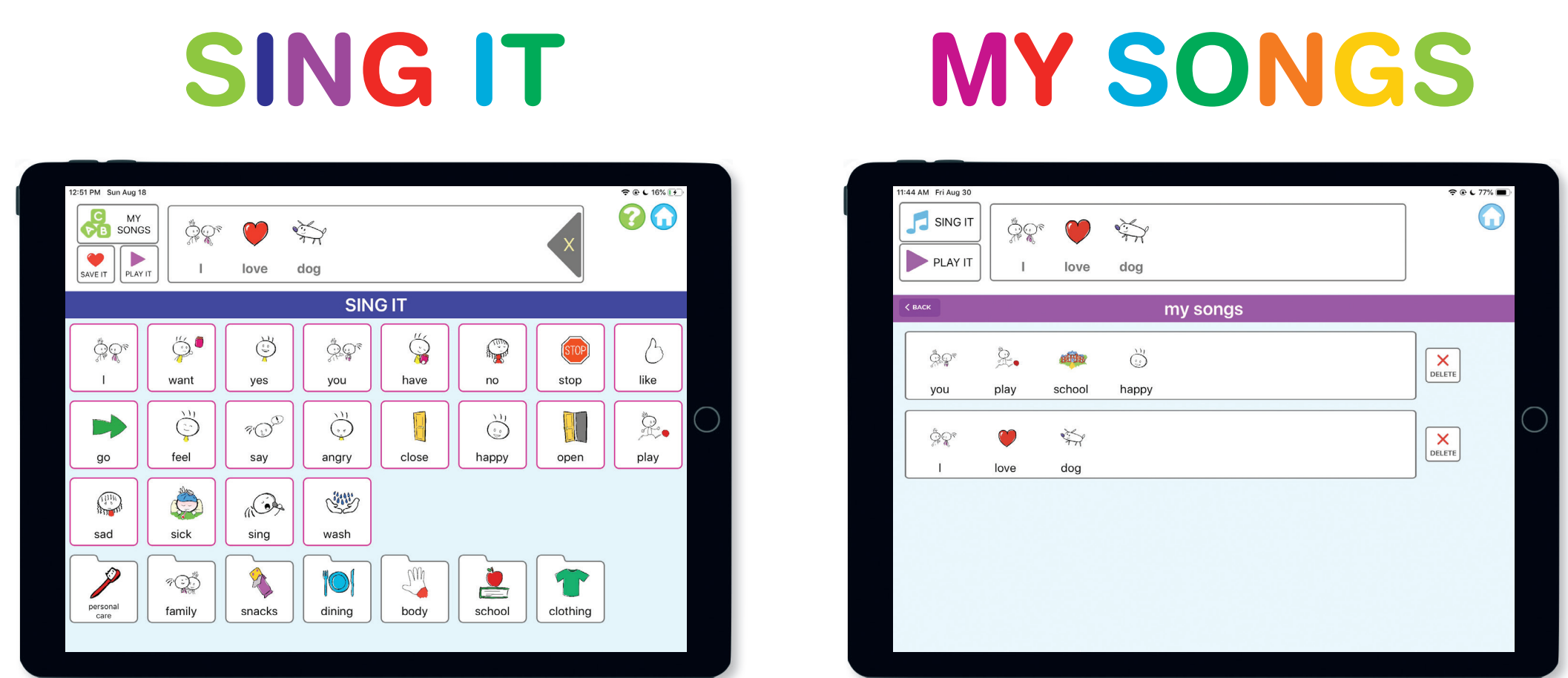
Project Components

Music Modules for Learning



In the receptive module, we pair words with music, lyrics and animation

In **Check It** we test for understanding and retention using distractors



In the expressive module we use the learned vocabulary to enhance expressive language. Children can save their songs to **My Songs**

In **My Songs** children can review the songs they've saved and rehearse or use them

www.singtosay.com/litreview

Use of Music and Animation

Music

We created songs based on popular music styles. Great attention is paid to the vocal performances

Listen to examples here:
www.singtosay.com/music

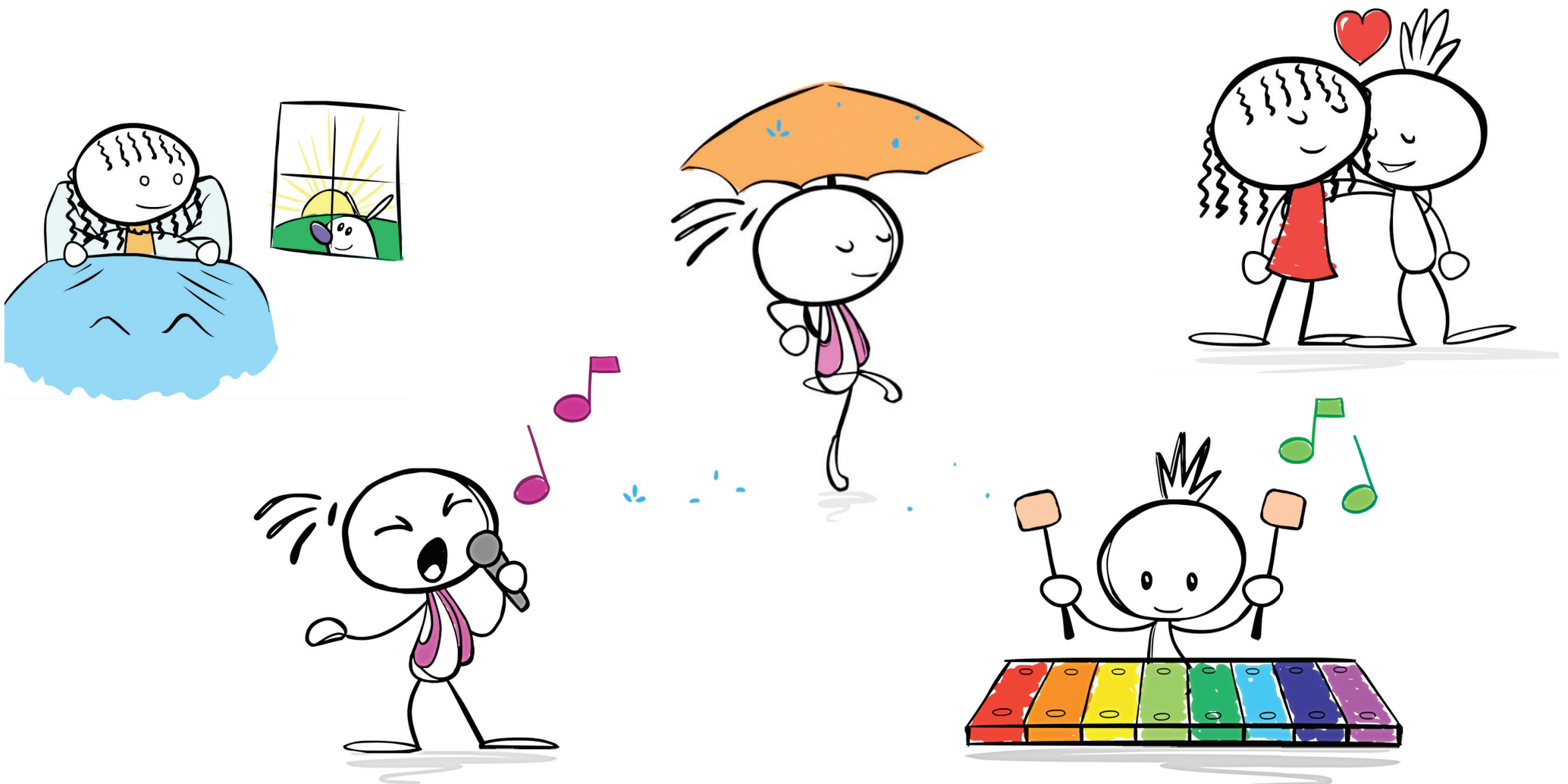


Lyrics

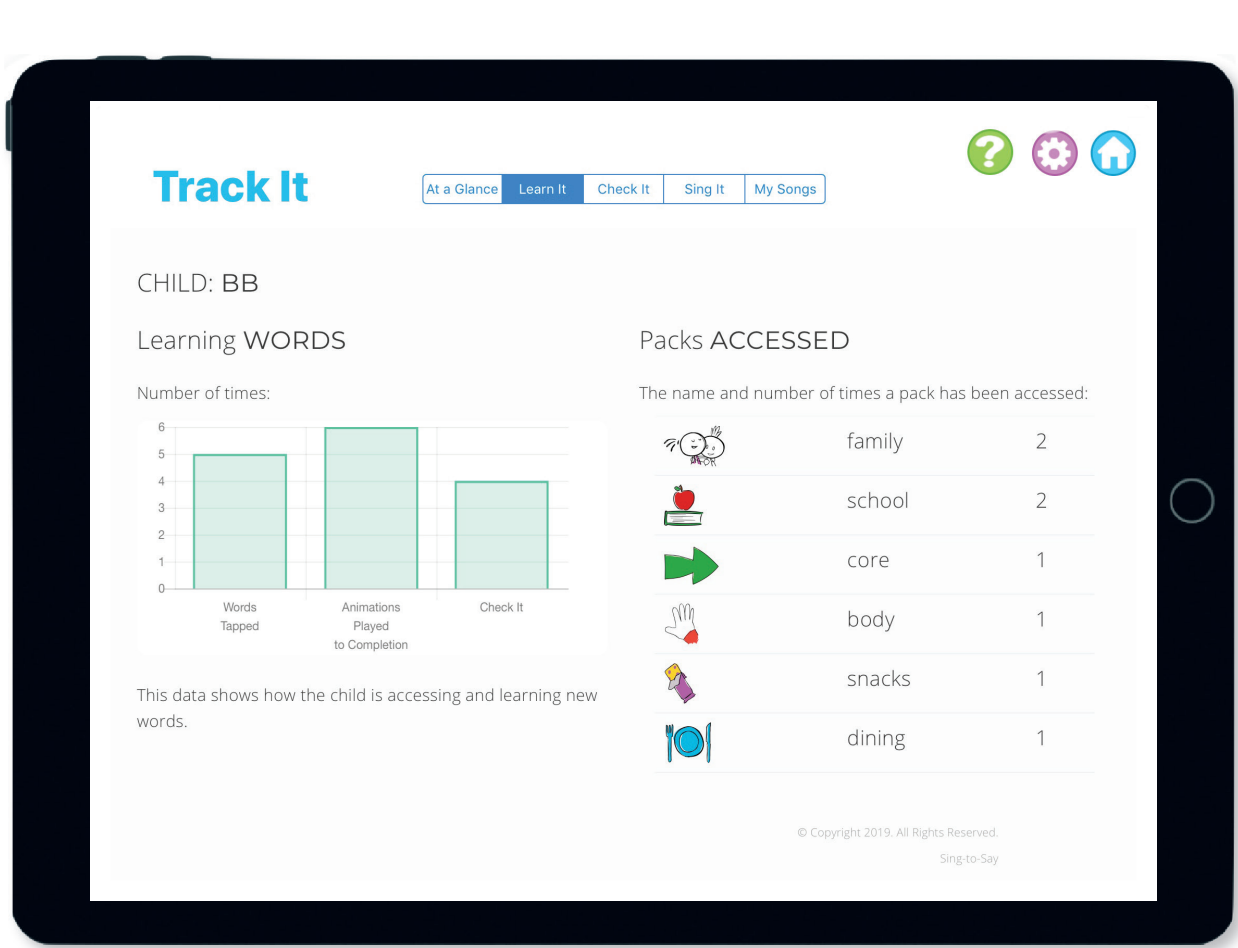
We crafted lyrics that focus on the keyword and emulate how children naturally use those words

Animation

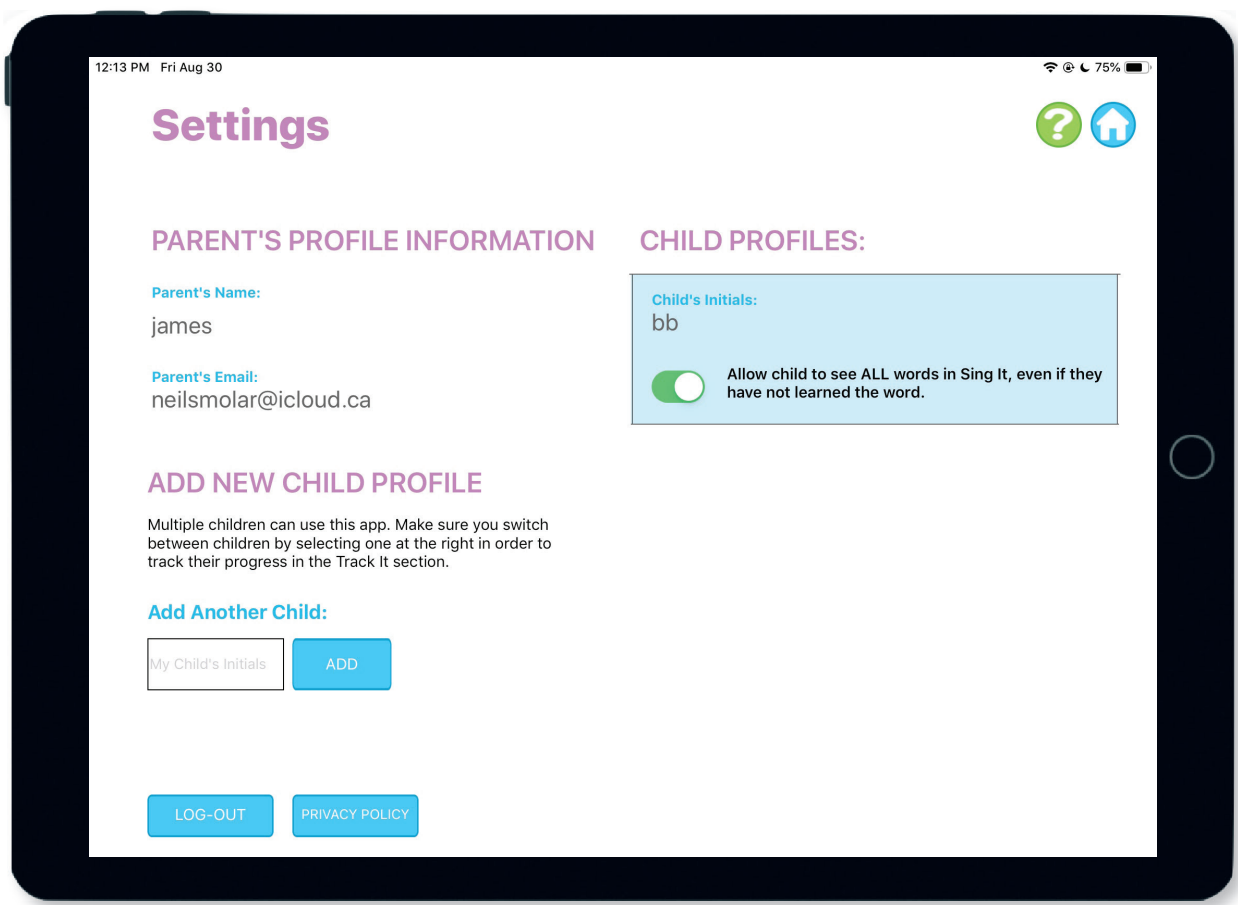
Sing to Say is hosted by The Minimops™



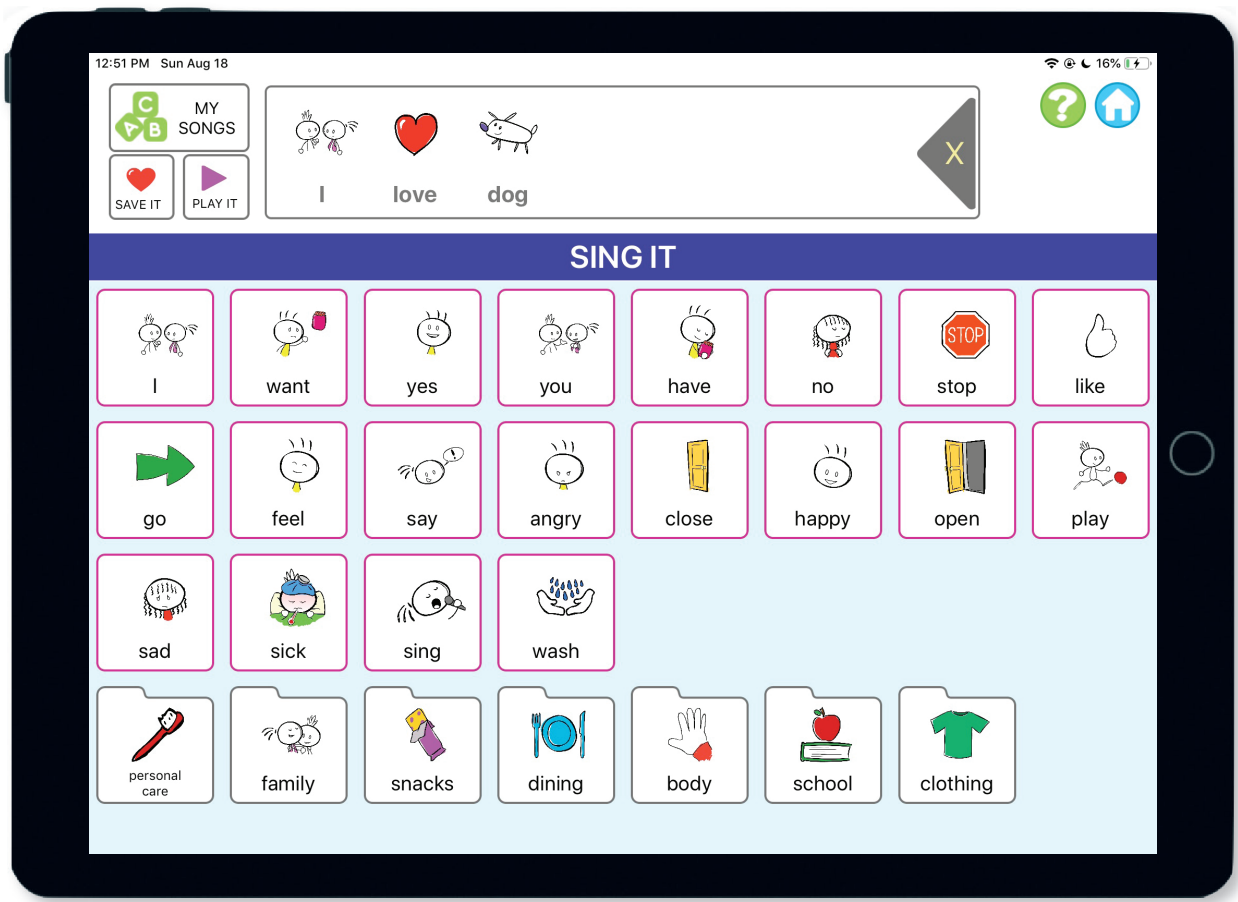
Measuring Progress



Track It provides feedback



Personalization settings: touch sensitivity, masking, number of selectors



Hundreds of data points for each music module

Research History

Prior to designing the application, the Sing to Say team conducted a year of research on the **effects of music in learning language** for children with autism.

In partnership with Centennial College (Toronto Canada), the Applied Research and Innovation Center and two grants from Natural Sciences and Engineering Research Council of Canada (NSERC), we conducted a competitive review and produced our first **prototype**.

Formative research on the prototype included focus groups with educators and therapists and user testing with children, parents and educators in partnership with the Toronto District School Board.

In partnership with the **Berklee College of Music**, we created the current version of the application and conducted qualitative testing with 8 children aged 2 1/2 to 9 years old in 7 families, and informal interviews with 25 Speech Language Pathologists, Occupational Therapists and Applied Behavior Analysts and Educators.

Approved for research in the US, Canada and the UK by the Community Research Ethics Board, Waterloo, Canada.

Currently undergoing certification for compliance with the Children's Online Privacy & Protection Act (COPPA) with FTC approved COPPA safe harbor PRIVO.

Research Partners

Berklee Institute for Arts Education and Special Needs :

Dr. Rhoda Bernard,
Managing Director

Dr. Jennifer Zuk,
Music cognition researcher and clinical speech-language pathologist

Nadia Castagna, MMED,
Music educator specializing in education for students with autism



Special Consultants

Lisa Pierce-Goldstein, M.S. CCC-SLP,
Speech language pathologist for Boston Public Schools, New York Public Schools. Guest lecturer at Berklee Institute for Arts Education and Special Needs. Lisa is a classically trained singer and graduate of the Yale School of Music.

Sharon McCarry,
Founder and President and Executive Director of the Place Coco Foundation and The Little Red Playhouse, preacademic program for children with autism.

Charles J. Washburn,
Vice President of Seven Hills Foundation and COO of VSA Massachusetts (retired).

Bill Litshauer,
Sing to Say Board of Advisors. Vice President, Programs at Earth Rangers - currently the largest youth conservation membership group in the world.

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Founders

Neil Smolar:
CEO, Executive Producer, Music Concept.

Prior to Sing to Say, Neil founded digital media company NDi Media, a producer of interactive content for children. Partnerships with National Geographic, Discovery, Scholastic, PBS, BBC Kids, Corus, American Greetings and CBC. Composer for film and jazz performer. Neil is a McGill University (B.Sc.) alumnus and a graduate of the Berklee College of Music (Jazz Composition and Arranging) Contact: neil@singtosay.com (00) +1 514-919-5979 Montréal, Québec, Canada

Stacie Carroll:
Co-founder and Associate Producer, Pedagogy. Special needs educator the Toronto District School Board. Ground-breaking work using interactive technologies. Member of the Geneva Center for Autism, and she won the Prime Minister's Award for Teaching Excellence and the Teacher of the Year Award from the Council for Exceptional Children.