



Participation of Children with Special Needs at the Aquarium

Roger Ideishi, JD, OT

Charlene Willock, OTS

Kuma Thach, OTS

University of the Sciences in Philadelphia

Angela Wengar, VP & COO

New Jersey Academy of Aquatic Sciences

Siobhan Ideishi, OT

KenCrest Services

Wendy Ross, MD & Angela Jones, PhD

Albert Einstein Medical Center



Aquarium Project Partnership



University of the Sciences in Philadelphia
Department of Occupational Therapy

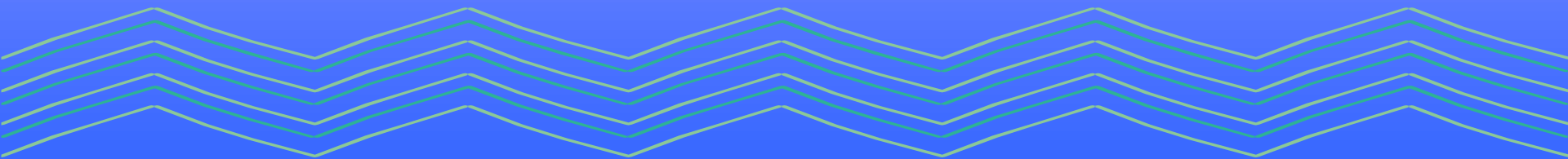
New Jersey Academy of Aquatic Sciences

Ken Crest Services
Division of Child & Family Services

Albert Einstein Medical Center
Department of Developmental Medicine

Objectives

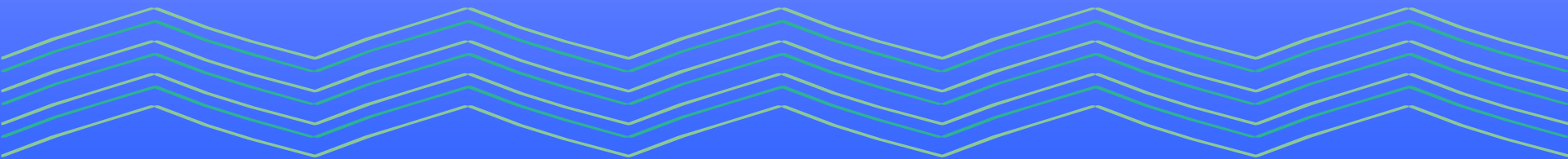
- **Examine access and participation of children with special needs and their families at the aquarium**
- **Identify facilitators & barriers to access and participation**
- **Develop strategies for participation**



Inclusion

- **“Inclusion requires we ensure not only that everyone is treated fairly or equitably, but also that all individuals have the same opportunities to participate in the naturally occurring activities of society”**

(American Occupational Therapy Association, 2004)



Ecological Framework



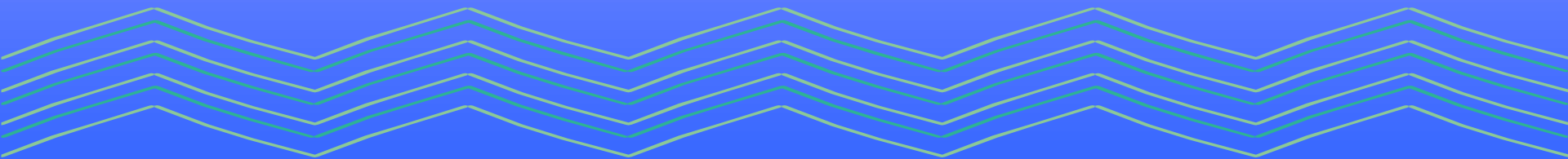
Ecological Framework

- Diversify a person's perception of the world to create meaningful experiences to explore



Ecological Framework

- A broad perception of self or the environment assumes a person also has opportunities and abilities to engage in **diverse environments** (Bronfenbrenner, 1995, 1999; Dunn, Brown & Youngstrom, 2003)



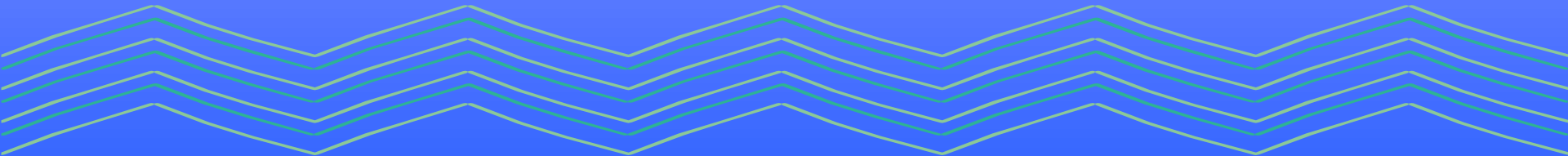
Participation in the Community

- **Children with special needs have limited community and social experiences outside of school** (Hilton, Crouch & Israel, 2008)
- **Supporting children with diverse learning styles in a broad range of community and social activities**

Occupational Therapy!

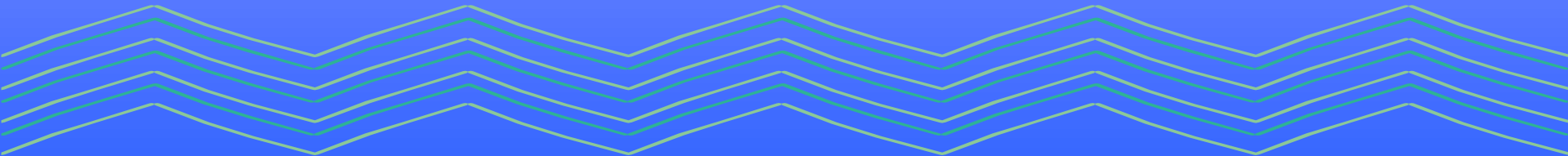
Participation in the Community

- **Minimizing the anticipated stress of new experiences**
 - Creating anticipated images
 - Exposure to social scenarios
 - Practicing behavioral responses with peers
 - Educating service staff
 - Supporting the family



School Strategies

- **Activities that facilitate**
 - Sensory processing & regulation
 - Motor responses
 - Cognitive & perceptual organization
 - Emotional awareness & responses
 - Social participation



School Strategies

- Creating aquarium themed exposure
 - Diorama, figurines, murals, puppets, pictures



School Strategies

- Animal Yoga



Seal Stretch

The Turtle



Getting Your
Seal Tail Up

School Strategies

- Dramatic play & dance
 - *"Rainbow Fish"*
 - *"Carnival of the Animals"*



School Strategies

- **Aquarium Community Outreach Program**
 - Seeing and feeling seal pelts, turtle shells, sea urchins
 - Sea Star Body Parts



School Strategies

- **Aquarium Community Outreach Program**
 - **Spiny Lobster Parade**

School Strategies

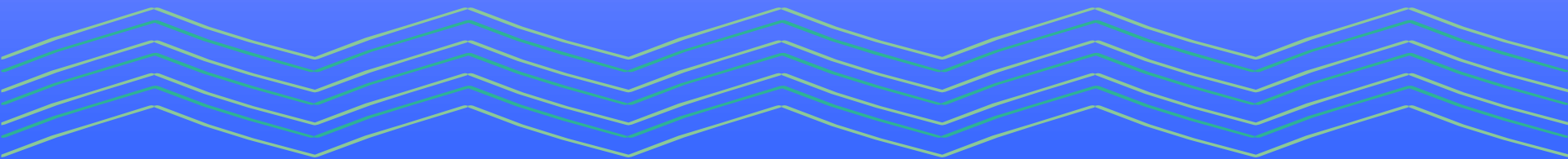
- Aquarium Community Outreach Program
 - Live Animals (sea star & horseshoe crab)



Home Strategies

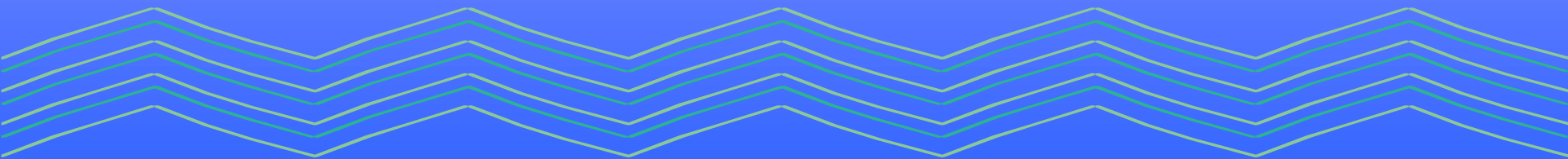
- **Social stories**
- **“A Social Story™ describes a situation, skill, or concept in terms of relevant social cues, perspectives and common responses...”**

(Gray, 2004, p. 2)



Home Strategies

- Custom made social stories were developed using the Social Story™ protocol (Gray, 2004)
 - Specific exhibits (e.g. touch tank, sea jelly tank, penguin area, shark tunnel)
 - An area of the aquarium (e.g. ticket entrance, bathroom, cafeteria)
- Each scenario was paired with a photograph of the exhibit or the area



Social Story Example



Meet the sting ray.

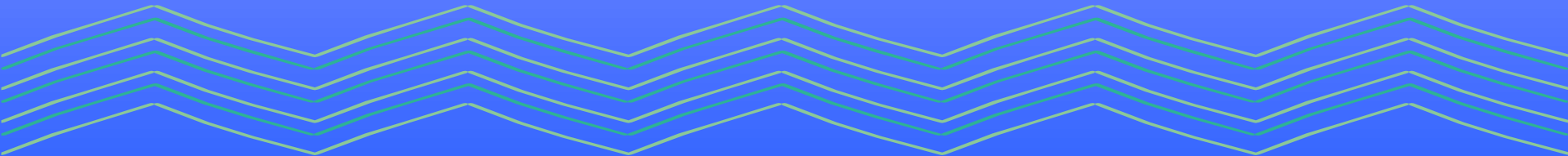
The sting ray lives in the water.

I can touch the sting ray if I want.

The sting ray feels cold, wet, and smooth.

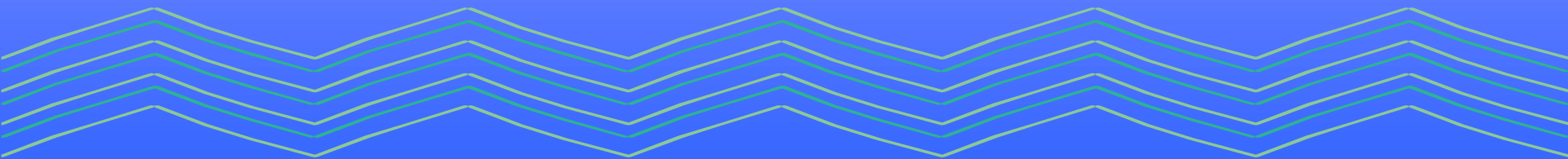
Home Strategies

- **Story reading, a regular school and home activity for the participating preschool children**
- **Social stories introduced at the preschool**
- **Parents read the stories at home prior to aquarium visit**



Opportunity & Inclusion

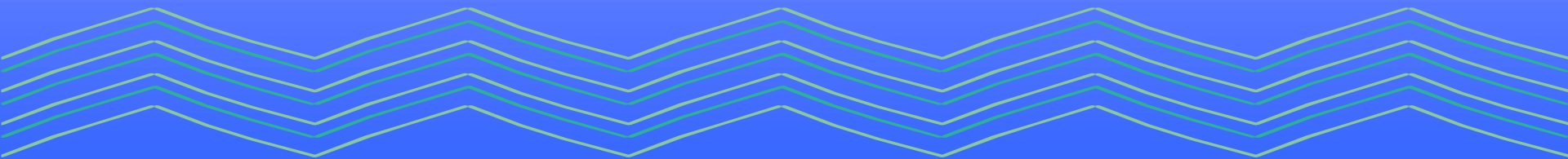
- Admission
 - Adult - \$20
 - 2-12 yrs old - \$16
 - Season pass - \$155



Community & Social Participation

Aquarium-Preschool Partnership

- Special community partnership discount
 - \$5 per person
 - +200 persons (2008)
 - +450 persons (2009)



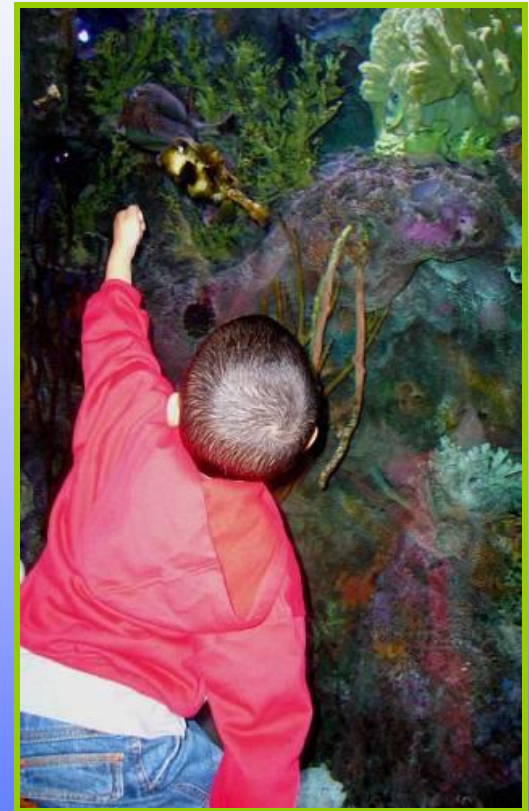
Aquarium Pilot Study



- Family pre-interviews
- Pre-survey
- Home & school preparations
- Aquarium visit
- Post-survey

Aquarium Pilot Study

- **Pre-survey**
 - Prior experience with aquarium/museums
 - Reasons for going or not going
 - Perceived expectations
- **Home & school preparations**
 - Social stories for home activities
 - Aquatic themed school activities



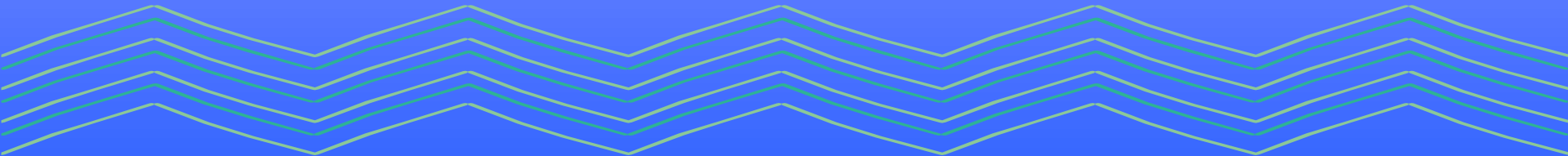
Aquarium Strategies

- A “learning kit” in an over-the-shoulder carry bag
 - Sensory aquarium map
 - Sensory flip book
 - Aquarium artifact box
 - Soft manipulative toys
 - Picture schedule



Aquarium Visit

- Time range of visit: 20 minutes to 2 hours
- Generally moved quickly from one exhibit to another (less than 45 secs)
 - Crowded or closed exhibit areas were difficult (e.g. shark tunnel)
- Longer attention periods (5 minutes+) at particular exhibits
 - Outdoor open areas facilitated calm and quiet engagement
 - Visually larger exhibits facilitated increased attention



Aquarium Project Results

- **Active use of materials and verbal references to social story**
 - Parents rated effective
 - Useful for direction & calming
- **All children touched an animal to some degree**
 - All parents surprised their children touched animals



Current & Future Endeavors

- New Jersey Academy of Aquatic Science
- Art Reach
- Pennsylvania Ballet
- Walnut Street Theater
- Please Touch Museum
- Philadelphia Horticultural Society
- Philadelphia Int'l Airport, Southwest Airlines, Transportation Security Administration (TSA)
- Web-based resources for community & social participation





Occupational Therapy!

**Creating Access & Opportunities for
Inclusive Social Participation**

