Supplementary Materials

Supplementary File S1: Sibling Section of the SPOT Guide

Guiding Questions to Assess Sibling Attributes

Discussion to occur with parent and the sibling of the child who has a physical disability. Let the sibling answer the questions to hear their viewpoint.

Interest and desire to participate in the activity: Discuss the child's interest and desire to socially participate in the play activity with their sibling.

- What do you like best about this activity?

Knowledge and understanding of the activity: Discuss the child's knowledge and experience with the activity such as rules of the game, how to interact with their sibling, and understanding of instructions.

- Have you done this activity or something similar before?
- Can you tell me about the activity? How do you play (describe to me what you do in this activity)?

Knowledge and understanding of child's strengths & limitations: Discuss the child's knowledge of their brother or sister's disability.

- Tell me about your sibling (name of child).
- What is easy about this activity for your sibling to do?
- What is hard about this activity for them to do?

Cognitive abilities (judging, selecting, sequencing, organizing, prioritizing, identifying solutions, creating, and multi-tasking): Task analysis of cognitive skills associated with the goal. Discuss how the child problem solves during the play activity.

- When you are playing with your sibling (in this activity or similar one), how do you know the activity is going well? (what do you do, what does your sibling do?)
- What have you found to be difficult when you play (in this activity) with your sibling with a physical disability?
- What happens when the play activity is not going as you thought? (what do you do, do you get help, stop, leave, get upset)

Sibling relationship in play activities (cooperation, turn-taking, reciprocity): Discuss relationship and interactions with their sibling with a physical disability.

- How do you get along with (name of sibling)?
- Tell me about how you play together.

Communication abilities: Discuss the sibling's ability to communicate with others and the sibling.

- Tell me about how you talk with others, like your friends or cousins
- Tell me about how you talk with your brother or sister with a disability.

Social-emotional and regulation abilities (self-awareness, self-management, social awareness, working cooperatively): Discuss social emotional skills during social participation with their sibling.

- Tell me about your feelings during this activity in the past or similar activities.
- Are there times when you feel really happy? And times when you are sad or upset?
- What do you do when you start to feel this way?
- Describe how (name of child) adapts to changes in the activity. (ex. when things are going well or not so well)

- Do you ever need help to settle down/calm self/show feelings (control emotions)?

Sensory-perceptual considerations:

- How do you see, move, smell, and hear?
- To the parent: Does (name of child) usually seek out or avoid any activities? Describe some examples.

Physical abilities: Discuss physical aptitude, interests, and experience in activities with physical components (strength, coordination, flexibility, endurance).

- Do you like to play sports, dance, gymnastics, or other activities that involve movement and using your body?
- To the parent: Tell me about your child's physical abilities, such as coordination, strength, endurance, flexibility.

Health and safety considerations:

- Describe any other health or safety concerns that might affect (name of child) participation in this activity.

Other: Discuss any additional attributes that are important to consider.

SIBLING ATTRIBUTES **Sibling Name:**

Attributes Specific to the Participation Goal	Current Ability and Considerations	What Needs to Happen?
Interest and desire to participate in the activity with their sibling		
Knowledge and understanding of the activity		
Knowledge and understanding of child's strengths & limitations		
Cognitive abilities (judging, selecting activities, sequencing, organizing, prioritizing, creating, multi-tasking, problem-solving, getting help when needed)		
Sibling relationship in play activities (cooperation, turn-taking, reciprocity)		
Communication abilities • With their sibling • With others		

Social emotional and regulation abilities (self-awareness, self-management, social awareness, working cooperatively)		
Sensory-perceptual considerations (vision)		
Physical abilities (special interests)		
Health and safety considerations		
Other		

Supplementary Table S1 : Intervention Log

Family ID: Date: Location of session: Length of session: Social play time:
Participation Goal: Intervention Log

		C	S	F	
	Progress monitoring by addressing questions, discussing social play activity participation, and/or related concerns.				Notes:
	Collaborated with child/family on identifying, planning for, or implementing activity adaptations – task and object adaptations				
	Collaborated with child/family on identifying, planning for, or implementing environmental adaptations/modifcations to support participation goal • Physical environment • Sensory environment				
	Collaborated with child/family on identifying, planning for, or supporting meaningful experiences (application of abilities) related to participation goal				
	Addressed abilities/skills within social play activity:	Yes or No			
	Coaching and/or guided practice of cognitive abilities				
	Coaching and/or guided practice of communication				
	Coaching and/or guided practice of social skills				
	Coaching and/or guided practice of emotional regulation				
	Coaching and/or guided practice of sensory perceptual skills				
	Coaching and/or guided practice of physical abilities, including physical assistance				
	Addressed social play participation with holistic approach	Yes or No			
	Provided encouragement and support for participation goal				
	Addressed body functions/structure not within context of social play activity				
	Shared and discussed resources on participation goal such as information, equipment, funds, transportation, or aides				
	Supported health promotion & injury prevention				

Child, Sibling, and Family Engagement		
Extent child actively involved in the session (sharing information, responsiveness to others, participating in activities, interacting with sibling): Great, moderate, small, not at all		Extent family actively involved in the session (sharing information, solution-focused discussion, decision-making, participating in activities): Great, moderate, small, not at all
Extent sibling actively involved in the session (sharing information, choice-making, participating in activities, interacting with child): Great, moderate, small, not at all		On behalf of child (C), sibling (S), & family (F) Accessed materials & resources, information, and/or communicated with service providers.

Supplementary Table S2: Completed SPOT Guide for Case 1 and Case 2

CASE 1 CHILD ATTRIBUTES Name: Maura

Attributes Specific to the Participation Goal	Current Ability and Considerations	What Needs to Happen?
Interest and desire to participate in the activity with their sibling	She loves stacking blocks; interest with sibling is to be determined as she is unable to express on her own.	Maura to have opportunities to play with siblings.
Knowledge and understanding of the activity	She has a basic understanding of 1 step commands during activity (ex. "put on top").	Determine her understanding of turn taking and develop plan if needed.
Physical abilities (motor and praxis skills)	She can do some gross motor skills on her own: rolling, crawling, and sitting. She needs assistance in/out of chair at the table. She grasps blocks but drops things easily.	Maura to increase control of grasp and release for play.
Cognitive abilities (judging, selecting, sequencing, organizing, prioritizing, identifying solutions, multi-tasking, getting help when needed)	She needs assistance as she is following a 1 step direction, not 2 step directions. Maura will imitate once shown and sometimes will seek out mom or dad when upset.	Maura to increase following directions.
Communication abilities (assistive device use, adapted methods)	She uses signs – "more" "all done" beginning to use "my turn" and will nod yes/no with prompts.	Maura to use signs consistently.
Social emotional and regulation abilities (self-awareness, self-management, social awareness, working cooperatively)	She will yell out "Ahh!" when needs help. She may also cry, throw items, and hit herself (head with the back of her hand or head on the floor)	Maura to use coping or calming strategies.
Sensory-perceptual considerations (vision)	Maura avoids slimy, wet textures and loud noises bother her (she will cry or cover her ears). Parents report no visual issues.	
Health and safety considerations	Recently she has had excessive gas and discomfort where she extends backwards to lengthen her torso	
Other	She makes eye contact with strangers (me) and plays with items on the floor unless she is assisted to a chair at the table.	

CASE 1 SIBLING ATTRIBUTES Sibling Name: Greg

Attributes Specific to the Participation Goal	Current Ability and Considerations	What Needs to Happen?
Interest and desire to participate in the activity with their sibling	He has little ability to describe this on his own.	Greg to value playing with his sister Maura.
Knowledge and understanding of the activity	He described taking turns with mom supporting him by providing verbal prompts.	Greg to internalize turn-taking with Maura.
Knowledge and understanding of child's strengths & limitations	"I don't know" Parent report: he stated this week "She doesn't talk. Why doesn't she talk."	Greg to understand Maura's interest in play and how she plays.
Cognitive abilities (judging, selecting activities, sequencing, organizing, prioritizing, creating, multi-tasking, problem-solving, getting help when needed)	Parents describe him as a leader, Luke following him. He said he gets a "big, big frown" when activity with his sibling not going as he wanted. He also may snatch the toy back from her.	Greg to be a role model during activities.
Sibling relationship in play activities (cooperation, turn-taking, reciprocity)	He could describe her interests in Barbies, Coco melon/music toy, rolling balls. His initiation to play with Maura is minimal.	Greg to include her and invite her to play.
Communication abilities • With the child • With others	He can make his needs known. His direct communication with Maura is infrequent.	Greg to increase direct communication with Maura during play.
Social emotional and regulation abilities (self-awareness, self-management, social awareness, working cooperatively)	When things are not going as he wanted or he is told 'no' he gets mad, angry, "big, big frown" and stomps away like a dinosaur. Sometimes he will get mom to help, or he will take the toy from his sibling.	Greg to have effective coping strategies.
Sensory-perceptual considerations (vision)	He likes videos, computers, and quick and fast movement.	Greg to expand his play repertoire to include his siblings.
Physical abilities (special interests)	He likes balls, sports, running, jumping, and rough housing.	
Health and safety considerations		
Other	He engaged with me (a stranger) by pretending to be a superhero and darting around the room, playing with his dinosaurs.	

CASE 1 FAMILY ATTRIBUTES

Attributes Specific to Participation Goal	Current Situation	What Needs to Happen?
Interest and desire for the children to participate in the activity together	Family has a strong interest in their children playing together.	
Daily routines and family structure related to the children's participation in the activity together	Morning routine was described as Greg goes to preschool and Maura goes to therapy or to preschool for children who have disabilities. Maura returns home and has lunch. After lunch, Maura and Luke nap. Greg gets home, children play until dinner. On Th/Fri, their cousin is over in the afternoon.	Family to create opportunities for children to play together
Concerns related to the children's participation in the activity • Child • Sibling	Luke likes to knock things over/destroy things that Maura has built. Maura will hit herself when she becomes upset. Greg has little initiation to play with her.	Family to brainstorm play activities that are of interest to all.
Impression of the children's readiness to participate in the activity • Child • Sibling	It is a reasonable activity for the children.	
Family support (availability) for the children to participate in the activity together When is support provided? Setup, during, clean-up of activity Type of support: • Physical • Social-emotional • Communicative • Cognitive	Maura needs physical assistance to get in the chair and out of the chair. She has a non-slip surface on her seat to decrease the risk of falling and needs adult assistance to open the plastic bag of toys. The kids will help to clean up with prompts. All children need support to take turns and regulate emotions.	Family to use consistent support strategies during sibling activities.

CASE 1 ENVIRONMENT ATTRIBUTES

Attributes Specific to the Participation Goal	Current Description	What Needs to Happen?

Accessibility and safety of the place(s) where children play at home	The play space is an open space in the living room. The table is against the wall and an adult pulls out the table and chairs for access. The blocks are stored in a sealed bag.	Create child roles/responsibilities to increase access to items for play.
Availability of physical assistance to support physical needs of child (directly from another and/or device use)	An adult is always present to provide physical assistance. They have a stander Maura could use for playing while standing.	Try different positions for play with all the children.
Accessibility and adaptability of objects needed for play (retrieve objects, use objects)	The toys are stored in fabric bins at 2 heights. Maura can reach and remove toys in the lower bins. She needs help to open the bag of blocks and to get into the chair.	Increase access to toys. Identify toys for cooperative play and store these in lower bins.
Adaptability of sensory environment (visual, auditory, tactile) to promote participation in social play activity	It is generally a quiet environment. The tv is not on and the only sounds are from toys and people. When there is noise, Maura covers her ears, and she may moan.	Manage noise levels in the home.
Resources to address environmental needs (Assistive technology, community referrals)	The communication strategies used at school are unknown at this time.	Reach out to school for strategies

CASE 2 CHILD ATTRIBUTES Name: Kye

Attributes Specific to the Participation Goal	Current Ability and Considerations	What Needs to Happen?
Interest and desire to participate in the activity with their sibling	He wants to do something fun. Best thing about this: “play with his sister”	Kye to identify activities to do with his sister.
Knowledge and understanding of the activity	Difficulty verbalizing what he did during the activity – he did say he did it “with my sister.” When given cues, he provided more details to describe the activity	Kye’s knowledge of activity sequence to improve.
Physical abilities (motor and praxis skills)	He can grasp the writing utensil with modified grasp and sit independently on the floor. He does display rocking motion while seated during activities when excited. He identified drawing as the best thing he does during this.	Provision of physical assistance for Kye to successfully complete activity.

Cognitive abilities (judging, selecting, sequencing, organizing, prioritizing, identifying solutions, multi-tasking, getting help when needed)	Kye has a good deal of help to take turns and to remember the rules of the activity. Mom and dad provide the help.	Kye to improve understanding of reciprocal play rules.
Communication abilities (assistive device use, adapted methods)	He uses silly words and expressions.	Kye to increase verbal communication during activities.
Social emotional and regulation abilities (self-awareness, self-management, social awareness, working cooperatively)	Kye said that he feels really happy "that [Zoe] plays with me." He struggles with regulation and often will physically display being upset by kicking the ground, throwing toys, or tackling others.	Kye to use calming strategies.
Sensory-perceptual considerations (vision)	He has a visual impairment – holds items close to view them and to write/draw. He is sensitive to loud noises – needs headphones to block out sound. He is sensitive to extreme temperature changes – needs gradual introduction. Crowds of people (parties) overwhelm him – may lead to him avoiding everyone and activities or shutting down.	Kye to manage sensory sensitivities.
Sibling relationship in play activities (cooperation, turn-taking, reciprocity)	Kye describes Zoe as being smart and they get along "good." He listed play doh, kinetic sand and bike races as things they like to play with.	Kye to improve communication with his sister.
Health and safety considerations	Has fell in the last week – getting out of car and a week ago on the steps	Kye to decrease risk of falling during activity. Kye to express need for help during physical challenges.
Other	He does have an adaptive bike but prefers to push it rather than sit and peddle.	

CASE 2 SIBLING ATTRIBUTES Sibling Name: Zoe

Attributes Specific to the Participation Goal	Current Ability and Considerations	What Needs to Happen?
Interest and desire to participate in the activity with their sibling	She is creative, likes crafts, and drawing	

Knowledge and understanding of the activity	She often will do similar activities on her own. She understands turn-taking and tries to help her brother.	Zoe to understand her brother's involvement in the activity.
Knowledge and understanding of child's strengths & limitations	She described her brother as "playful, kind, smart, bossy." She identified easy parts of the activity: his choice of colors, shapes, and the hard parts: finding the spot he wants to draw/paste and making shapes/drawing. She understands that he may struggle with visual motor skills.	Zoe to use strategies to support her brother to play with her.
Cognitive abilities (judging, selecting activities, sequencing, organizing, prioritizing, creating, multi-tasking, problem-solving, getting help when needed)	She can tell that he likes the activity because he smiles, and if he gets upset, he can get rough/tackle her. Usually needs a parent to get involved who may direct her to go into another room to do something on her own.	Zoe to verbally communicate with her brother throughout the activity (feedback, praise, questions) since his vision is impaired.
Sibling relationship in play activities (cooperation, turn-taking, reciprocity)	Zoe feels they get along and they show this by sharing, taking turns and doing things together like telling stories and jokes. When her brother leaves an activity, Zoe wants him to stay and finish the activity, but she is used to it now. She shares ideas with her brother to draw/craft during the activity.	Zoe to communicate feelings in a socially appropriate manner.
ommunication abilities • With the child • With others	She can express herself and converse with her brother. She does not always say how she feels when he gets upset.	Zoe to communicate ideas in a socially appropriate manner.
Social emotional and regulation abilities (self-awareness, self-management, social awareness, working cooperatively)	She does get mad at times when her brother is not sharing or taking turns. Sometimes she just takes the toy or her turn without waiting. And other times, she will 'appease' her brother (mom reported) and just give in. If she gets really upset, she does cry and needs help to settle.	Zoe to have better conflict resolution with her brother.
Sensory-perceptual considerations (vision)	Sensory skills are as expected for her age.	

Physical abilities (special interests)	She participates in wrestling, gymnastics, softball, and running club. Her physical skills are as expected for her age, and she enjoys physical activity.	
Health and safety considerations	None related to this activity	

CASE 2 FAMILY ATTRIBUTES

Attributes Specific to Participation Goal	Current Situation	What Needs to Happen?
Interest and desire for the children to participate in the activity together	Family has a strong desire for the kids to interact together, play less isolated, and to resolve conflicts they have during play.	
Daily routines and family structure related to the children's participation in the activity together	Together activities include family mealtimes and daily walks. Since Kye is at Extended School Year the afternoons, Friday, and/or weekends for joint play activities. Both or one parent is home with kids. Zoe is home during the day in summer.	Family to structure more frequent joint play activities.
Concerns related to the children's participation in the activity • Child • Sibling	Concerns for resolving conflict, coping skills for Kye	Family to improve comfort and confidence in helping the children resolve conflicts and helping the children to use calming strategies.
Impression of the children's readiness to participate in the activity • Child • Sibling	Kye has outbursts, but redirectable. Zoe likes to help, happy to be a part of the activity. They benefit from choices and rewards	Family to maximize encouraging Zoe and Kye participating.
Family support (availability) for the children to participate in the activity together When is support provided? • Setup, during, clean-up of activity Type of support: • Physical • Social-emotional • Communicative • Cognitive	Full support is needed at all stages of activity and mom prefers to help with prep. • Physical help with fine motor coordination. • Social-emotional support when children are upset.	Family to develop awareness of tasks the children can be involved with regarding setup, during, or clean-up. Family to develop strategies to support children participating in non-preferred activities. Family to improve confidence using conflict resolution strategies. Family to monitor Kye's physical support needs prior to the activity.

CASE 2 ENVIRONMENT ATTRIBUTES

Attributes Specific to the Participation Goal	Current Description	What Needs to Happen?
Accessibility and safety of the place(s) where children play at home	Play space is accessible by both children and the parents help to set up craft activities.	
Availability of physical assistance to support physical needs of child (directly from another and/or device use)	Someone is always there with them, usually mom or dad or both. There is rarely a sitter.	Adult to anticipate the physical assistance Kye will need during activity.
Accessibility and adaptability of objects needed for play (retrieve objects, use objects)	Parent retrieves supplies, decides on the space, and children help take out specific items for the activity or sometimes parent gives them each a role/job. Parent may enlarge print for Kye to read. He has loop scissors to cut.	
Adaptability of sensory environment (visual, auditory, tactile) to promote participation in social play activity	Sensory environment – no real issues here. Kids tend to like textured items (play doh, kinetic sand), and the living room is carpeted. Mom preps the space with newspaper or other covers on the floor for such activities.	
Resources to address environmental needs (Assistive technology, community referrals)	None identified at this time.	