

The DATA Model for Teaching Preschoolers with Autism

by

Ilene Schwartz, Ph.D., BCBA-D

University of Washington
Seattle

Julie Ashmun, M.Ed., BCBA

University of Washington
Seattle

Bonnie McBride, Ph.D., BCBA-D

University of Oklahoma Health Sciences Center
Oklahoma City

Crista Scott, M.Ed., BCBA

University of Washington
Seattle

and

Susan Sandall, Ph.D.

University of Washington
Seattle



Baltimore • London • Sydney



Paul H. Brookes Publishing Co.

Post Office Box 10624
Baltimore, Maryland 21285-0624
USA

www.brookespublishing.com

Copyright © 2017 by Paul H. Brookes Publishing Co., Inc.
All rights reserved.

“Paul H. Brookes Publishing Co.” is a registered trademark of
Paul H. Brookes Publishing Co., Inc.

Typeset by Progressive Publishing Services, Emigsville, Pennsylvania.
Manufactured in the United States of America
by Sheridan Books, Chelsea, Michigan.

Cover image is © istockphoto/Christopher Fletcher.

All examples in this book are composites. Any similarity to actual individuals or circumstances is coincidental, and no implications should be inferred.

Purchasers of *The DATA Model for Teaching Preschoolers with Autism* are granted permission to download, print, and photocopy the blank forms in the text for educational purposes. These forms may not be reproduced to generate revenue for any program or individual. Photocopies may only be made from an original book. *Unauthorized use beyond this privilege may be prosecutable under federal law.* You will see the copyright protection notice at the bottom of each photocopyable page.

Library of Congress Cataloging-in-Publication Data

The Library of Congress has cataloged the print edition as follows:

Names: Schwartz, Ilene S.

Title: *The DATA Model for teaching preschoolers with autism*/by Ilene Schwartz, Ph.D., University of Washington, Julie Ashmun, M.Ed., University of Washington, Bonnie McBride, Ph.D., University of Oklahoma, Crista Scott, M.Ed., University of Washington, and Susan Sandall, Ph.D., University of Washington.

Description: [First edition] | Baltimore : Paul H. Brookes Publishing Co., [2016] | Includes bibliographical references and index.

Identifiers: LCCN 2016025989 (print) | ISBN 9781598573169 (Paper)

Subjects: LCSH: Autistic children—Education (Early childhood)—United States. | Children with disabilities—Education (Early childhood)—United States. | Behavioral assessment. | Mainstreaming in education—United States. | Inclusive education—United States. | Project DATA.

Classification: LCC LC4718. S356 2016 (print) | LCC LC4718 (ebook) | DDC 371.94—dc23

LC record available at <https://lccn.loc.gov/2016025989>

British Library Cataloguing in Publication data are available from the British Library.

2020 2019 2018 2017 2016

10 9 8 7 6 5 4 3 2 1

Contents

About the Forms	vi
About the Authors	vii
Preface	ix
Acknowledgments	xii

Section I: Fundamentals of the Project DATA Model

1	Introducing the DATA Model Approach	3
2	Characteristics of a High-Quality Inclusive Early Childhood Program for Children with Autism Spectrum Disorder	9
3	Basic Principles of Applied Behavior Analysis	19
4	Instructional Strategies to Facilitate Learning	29
5	Determining What to Teach	43
6	Writing and Using the Instructional Programs	51
7	Teaching Project DATA Style	69
8	Data-Based Decision Making	79
9	Collaborating with Families and Other Partners	95
10	Implementing Project DATA in Your Community	109

Section II: Project DATA Instructional Programs

I	Adaptive	118
II	Executive Functioning	166
III	Cognitive	212
IV	Communication	264
V	Social	332
VI	Play	378
	Glossary	415
	References	419

Appendix

	Appendix A: The DATA Model Skills Checklist	421
	Appendix B: DATA Model Skills Checklist: Curriculum Crosswalk	439
	Appendix C: DATA Model Skills Checklist: Materials List	451
	Appendix D: Frequently Asked Questions	455
	Index	457

About the Forms

Purchasers of this book may download, print, and/or photocopy blank forms for educational use. These materials are included with the print book and are also available at **www.brookespublishing.com/schwartz/materials** for both print and e-book buyers.

About the Authors

Ilene Schwartz, Ph.D., BCBA-D, is Professor of Education at the University of Washington (UW) and the Director of the Haring Center for Research and Training in Inclusive Education at UW. She earned her Ph.D. in child and developmental psychology from the University of Kansas and is a Board Certified Behavior Analyst (BCBA-D). Ilene has an active research and professional training agenda with primary interests in the area of autism, inclusive education, and the sustainability of educational interventions. She has had consistent research funding from the U.S. Department of Education since 1990 and serves on a number of editorial review boards including the Topics in Early Childhood Special Education and the Journal of Early Intervention. Ilene is the director of Project DATA at the University of Washington and is currently involved in research projects examining the efficacy of the Project DATA model with toddlers and preschoolers with autism. Ilene is dedicated to building inclusive schools and societies and views inclusion as the celebration of diversity put into action. She is proud of what she and her colleagues have accomplished at the Haring Center, where research, training, and service are integrated to provide world-class early learning experiences to children with and without disabilities.

Julie Ashmun, M.Ed., BCBA, is Director of the Professional Development Unit at the University of Washington's Haring Center for Research and Training in Inclusive Education. She began working in preschool and child care centers in 1995, and since then has been a Project DATA teacher and coordinator, a professional development research assistant and trainer, and a family resource coordinator. Julie has a master's degree in education, with an emphasis in early childhood special education, and is a Board Certified Behavior Analyst (BCBA). Julie is interested in effective practices for professional development in education and adult learning. She also devotes her time to researching and working with children with neurodevelopmental delays, including autism, and working with families and educators. Julie's research focuses on assessment and intervention practices for inclusive school-based programs for children with disabilities, including autism spectrum disorders.

Bonnie McBride, Ph.D., BCBA-D, is Associate Professor of Pediatrics in the Department of Developmental and Behavioral Pediatrics at the University of Oklahoma Health Sciences Center. She has expertise in early childhood special education, early childhood education, and applied behavior analysis. She has a long history of using behavioral principles to work with children with autism spectrum disorder (ASD) and other disorders. She completed her doctoral work at the University of Washington where she was a teacher in the inclusive preschool and the first head teacher of Project DATA. Since moving to Oklahoma, Bonnie has been instrumental in increasing the availability of services to young children with ASD and their families. She has developed a statewide network to implement Project DATA for toddlers and preschoolers in Oklahoma. She has served as Principal Investigator for two randomized control trials of the Project DATA model funded by the Institute of Education Sciences (toddler and preschool).

Crista Scott, M.Ed., BCBA, taught for 8 years in early childhood special education. Most of that time was spent as a teacher in an inclusive preschool and coordinator for Project DATA at the University of Washington's Haring Center for Research and Training in Inclusive Education. Crista has a master's degree in education, with an emphasis in early childhood special education, and is a Board Certified

Behavior Analyst (BCBA). In addition to teaching in special education, Crista is interested in providing effective professional development activities. She was a product manager for the Office of Head Start's National Center on Quality Teaching and Learning, supporting the development and dissemination of professional development materials for educators in early learning. Crista supported an Institute of Education Sciences grant that investigated the use of self and in-person coaching strategies to increase the use of embedded teaching practices in early childhood special education classrooms. Currently, she is coordinating an evaluation project on the implementation of Filming Interactions to Nurture Development, a program that supports interactions between childcare providers and children in infant and toddler environments. This project is in partnership with Washington State's Department of Early Learning and the University of Oregon.

Susan Sandall, Ph.D., is Professor of Education at the University of Washington. Her scholarly interests are effective instructional practices for young children with disabilities in inclusive settings; the changing roles of teachers of young children with disabilities, their relationships with other providers, and the implications for personnel preparation; and effective approaches for professional development and knowledge utilization. Susan was Principal Investigator for the National Center on Quality Teaching & Learning, funded by the Office of Head Start, and continues this work through EarlyEdU. She serves on the Division for Early Childhood's (DEC) Commission on Recommended Practices and edits publications on DEC recommended practices. She is coauthor of *Building Blocks for Including and Teaching Preschoolers with Special Needs* (2000, 2008). Awards include the Mary McEvoy Service to the Field Award and the Merle B. Karnes Service to the Division Award from the Division of Early Childhood, Council for Exceptional Children.

SECTION II

Project DATA Instructional Programs

■ I. ADAPTIVE	118
Mealtime	118
Personal Hygiene	128
School Skills	134
Self-Advocacy	152
■ II. EXECUTIVE FUNCTIONING.	166
Flexibility	166
Self-Regulation.	178
Persistence, Organization, and Time Management	186
Problem Solving	194
Emotional Knowledge	202
■ III. COGNITIVE	212
Imitation	212
Matching and Categorizing	224
Sequencing.	240
Emergent Literacy.	248
Emergent Math.	260
■ IV. COMMUNICATION	264
Following Directions	264
Responding	274
Initiating	284
Comprehension and Expression of Words and Sentences.	300
■ V. SOCIAL	332
Joint Attention.	332
Pragmatic Rules	346
Interaction with Peers.	360
■ VI. PLAY.	378
Play Fundamentals	378
Independent Play	392
Interactive Play	400

INSTRUCTIONAL PROGRAM SHEET: Mealtime

Drinks from an Open Cup

Child: _____ Date initiated: _____ Date completed: _____

Objective: In the presence of an open cup with liquid and told “Drink some ____” or “Take a drink,” or when thirsty, the child holds the cup, drinks from the cup, and places the cup back on the surface.

Mastery criterion:

- 90% or higher correct responding for each set
- Minimum of 10 opportunities per day
- 2 consecutive teaching days
- No spilling

Generalization:

People: At least two adults

Settings: At least two settings

Materials: At least three different cups

Things to consider: May also teach sitting at the table or eating skills

Task analysis	Teaching sequence
<ol style="list-style-type: none"> 1. Puts hands on cup 2. Picks up cup 3. Brings cup to mouth 4. Tilts cup toward mouth 5. Sips 6. Takes cup away from mouth, turning upright 7. Puts cup on table 8. Releases cup 	<ol style="list-style-type: none"> 1. Teach two steps of task analysis 2. Teach next two steps of task analysis 3. Teach next two steps of task analysis 4. Teach next two steps of task analysis

PROGRAMMING LOG

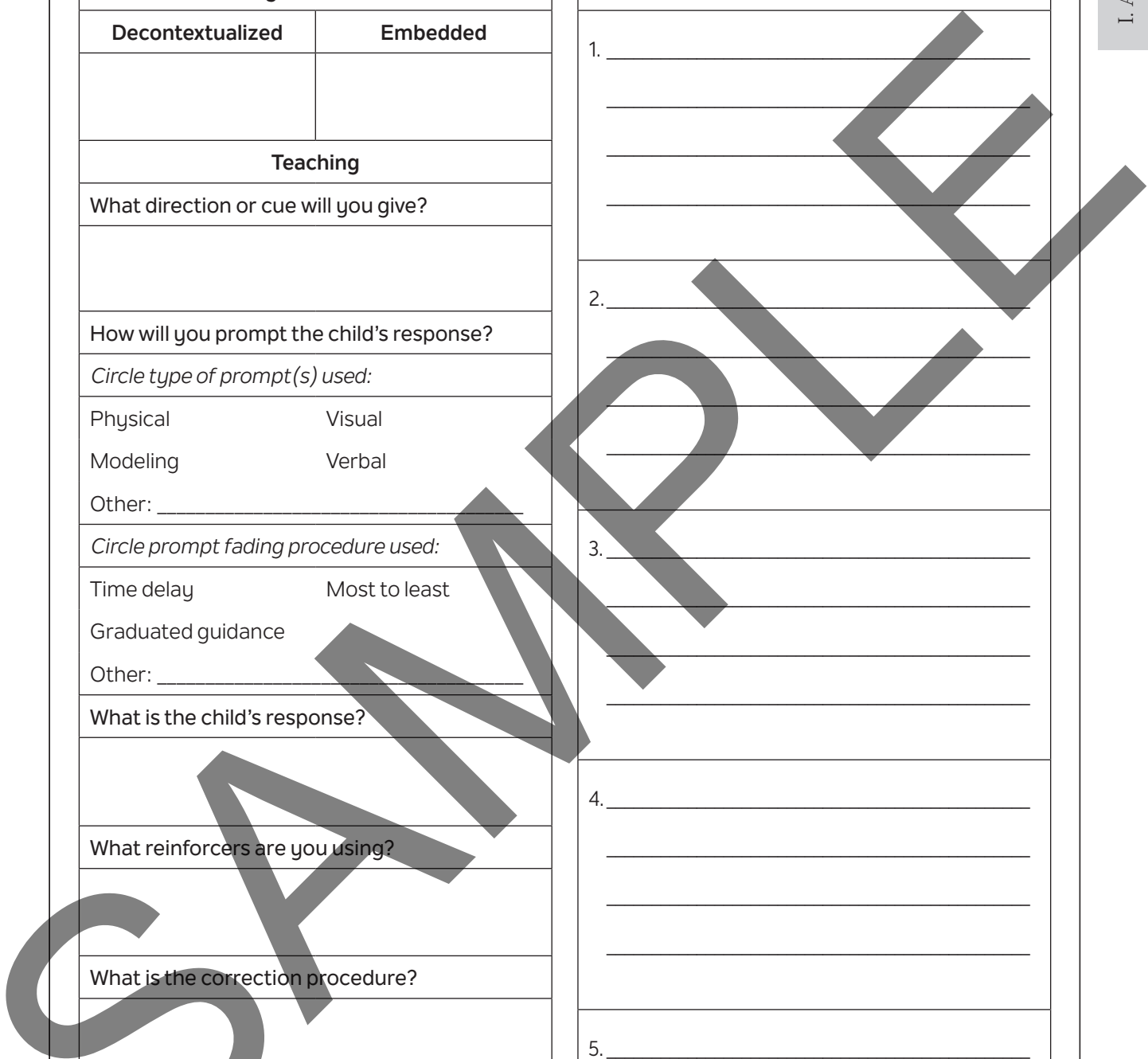
	Acquisition		Generalization		Maintenance	
	Start date	End date	Start date	End date	Date/data	Date/data
1						
2						
3						
4						

LESSON PLAN: Mealtime

Drinks from an Open Cup

Settings and materials	
Decontextualized	Embedded
Teaching	
What direction or cue will you give?	
How will you prompt the child's response?	
<i>Circle type of prompt(s) used:</i>	
Physical	Visual
Modeling	Verbal
Other: _____	
<i>Circle prompt fading procedure used:</i>	
Time delay	Most to least
Graduated guidance	
Other: _____	
What is the child's response?	
What reinforcers are you using?	
What is the correction procedure?	
How will you collect data? (<i>circle answer</i>)	
Percentage correct	Frequency
Duration	Permanent product
Other: _____	

Sets
1. _____ _____ _____ _____
2. _____ _____ _____ _____
3. _____ _____ _____ _____
4. _____ _____ _____ _____
5. _____ _____ _____ _____



INSTRUCTIONAL PROGRAM SHEET: Mealtime

Drinks from an Open Cup—Example

Child: _____ Date initiated: _____ Date completed: _____

Objective: In the presence of an open cup with liquid and told “Drink some _____” or “Take a drink,” or when thirsty, the child holds the cup, drinks from the cup and places the cup back on the surface.

Mastery criterion:

- 90% or higher correct responding for each set
- Minimum of 10 opportunities per day
- 2 consecutive teaching days
- No spilling

Generalization:

People: At least two adults

Settings: At least two settings

Materials: At least three different cups

Things to consider: May also teach sitting at the table and eating skills

Task analysis	Teaching sequence
<ol style="list-style-type: none"> 1. Puts hands on cup 2. Picks up cup 3. Brings cup to mouth 4. Tilts cup toward mouth 5. Sips 6. Takes cup away from mouth, turning upright 7. Puts cup on table 8. Releases cup 	<ol style="list-style-type: none"> 1. Teach two steps of task analysis 2. Teach next two steps of task analysis 3. Teach next two steps of task analysis 4. Teach next two steps of task analysis

PROGRAMMING LOG

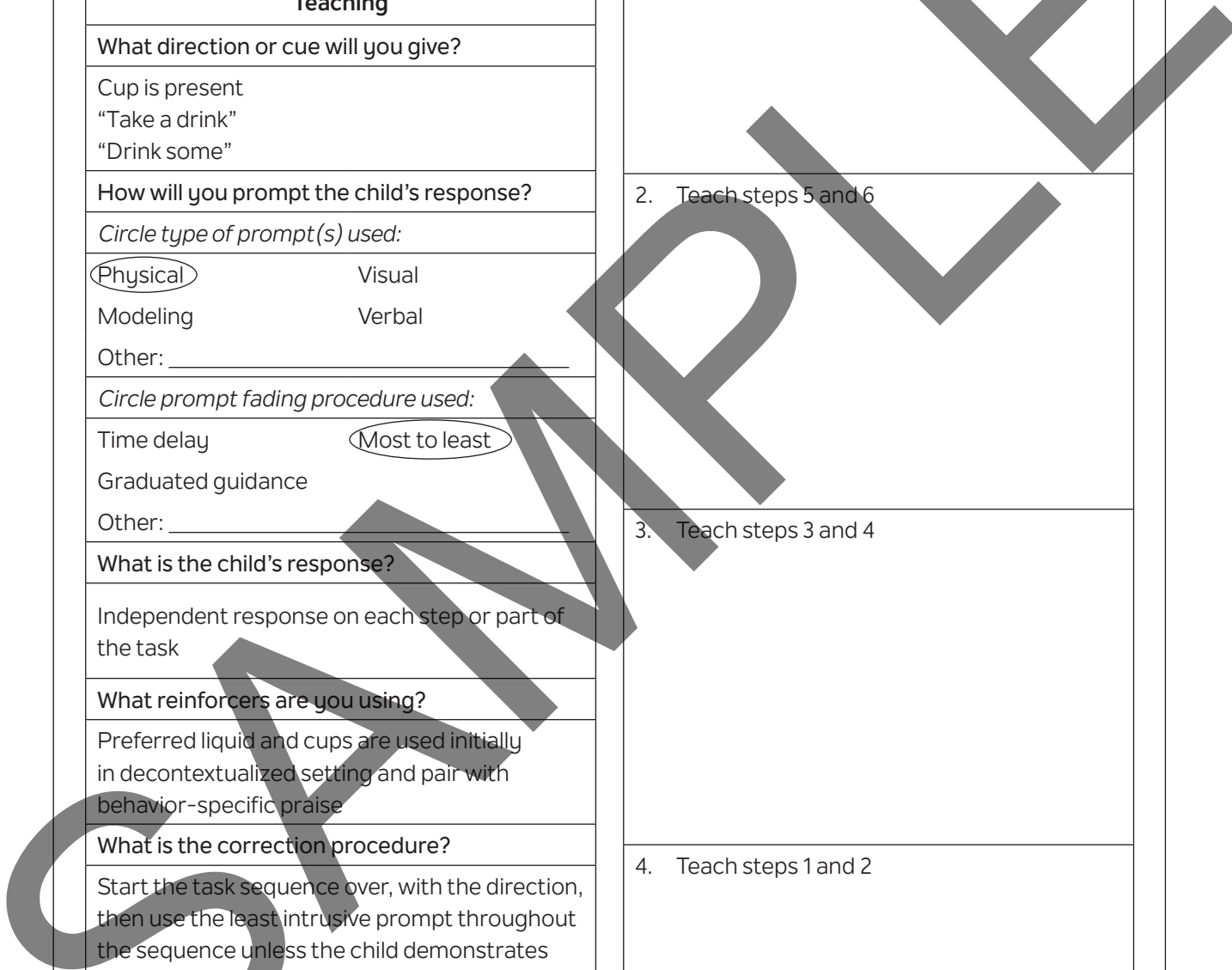
	Acquisition		Generalization		Maintenance	
	Start date	End date	Start date	End date	Date/data	Date/data
1	2/12/14	2/25/14				
2	2/25/14	3/7/14				
3	3/7/14	3/20/14				
4	3/20/14	4/4/14	4/4/14	4/25/14	5/15/14; 100%	6/15/14; 100%

LESSON PLAN: Mealtime

Drinks from an Open Cup—Example

Settings and materials	
Decontextualized	Embedded
Work at table: Child preferred small cup with preferred liquid	Snack and mealtimes. Same cups and liquids as served to peers
Teaching	
What direction or cue will you give?	
Cup is present "Take a drink" "Drink some"	
How will you prompt the child's response?	
<i>Circle type of prompt(s) used:</i>	
<input checked="" type="checkbox"/> Physical	<input type="checkbox"/> Visual
<input type="checkbox"/> Modeling	<input type="checkbox"/> Verbal
Other: _____	
<i>Circle prompt fading procedure used:</i>	
<input type="checkbox"/> Time delay	<input checked="" type="checkbox"/> Most to least
<input type="checkbox"/> Graduated guidance	
Other: _____	
What is the child's response?	
Independent response on each step or part of the task	
What reinforcers are you using?	
Preferred liquid and cups are used initially in decontextualized setting and pair with behavior-specific praise	
What is the correction procedure?	
Start the task sequence over, with the direction, then use the least intrusive prompt throughout the sequence unless the child demonstrates mastery of one of the steps in the sequence.	
How will you collect data? (circle answer)	
<input checked="" type="checkbox"/> Percentage correct	<input type="checkbox"/> Frequency
<input type="checkbox"/> Duration	<input type="checkbox"/> Permanent product
<input checked="" type="checkbox"/> Other: percentage correct for each step of the task	

Sets
Teach using backward chaining:
1. Teach steps 7 and 8
2. Teach steps 5 and 6
3. Teach steps 3 and 4
4. Teach steps 1 and 2



INSTRUCTIONAL PROGRAM SHEET: Mealtime*Eats with a Spoon or Fork*

Child: _____ Date initiated: _____ Date completed: _____

Objective: When presented with food that requires a fork or spoon for use, and told “Time to eat” or when the child is hungry, he or she initiates and uses a fork or spoon by spearing food or scooping.

Mastery criterion:

- 90% or higher correct responding for each set
- Minimum of 10 opportunities per day
- 2 consecutive teaching days
- Little or no spilling, as age appropriate

Generalization:**People:** At least two adults**Settings:** At least two settings**Materials:** At least two different spoons or forks

Things to consider: Movement of bringing fork or spoon to mouth and back down should be controlled and slow. Serve easy to scoop and spear food when teaching this skill (e.g., applesauce, pudding, cut up soft fruit).

Task analysis	Teaching sequence
1. Grasps spoon or fork	1. Teach two steps of task analysis
2. Scoops or spears food with spoon or fork	2. Teach next two steps of task analysis
3. Brings spoon or fork to mouth	3. Teach next two steps of task analysis
4. Puts spoon or fork in mouth and takes bite	4. Teach next two steps of task analysis
5. Takes spoon or fork from mouth	
6. Puts spoon or fork on table, plate, or bowl	

PROGRAMMING LOG

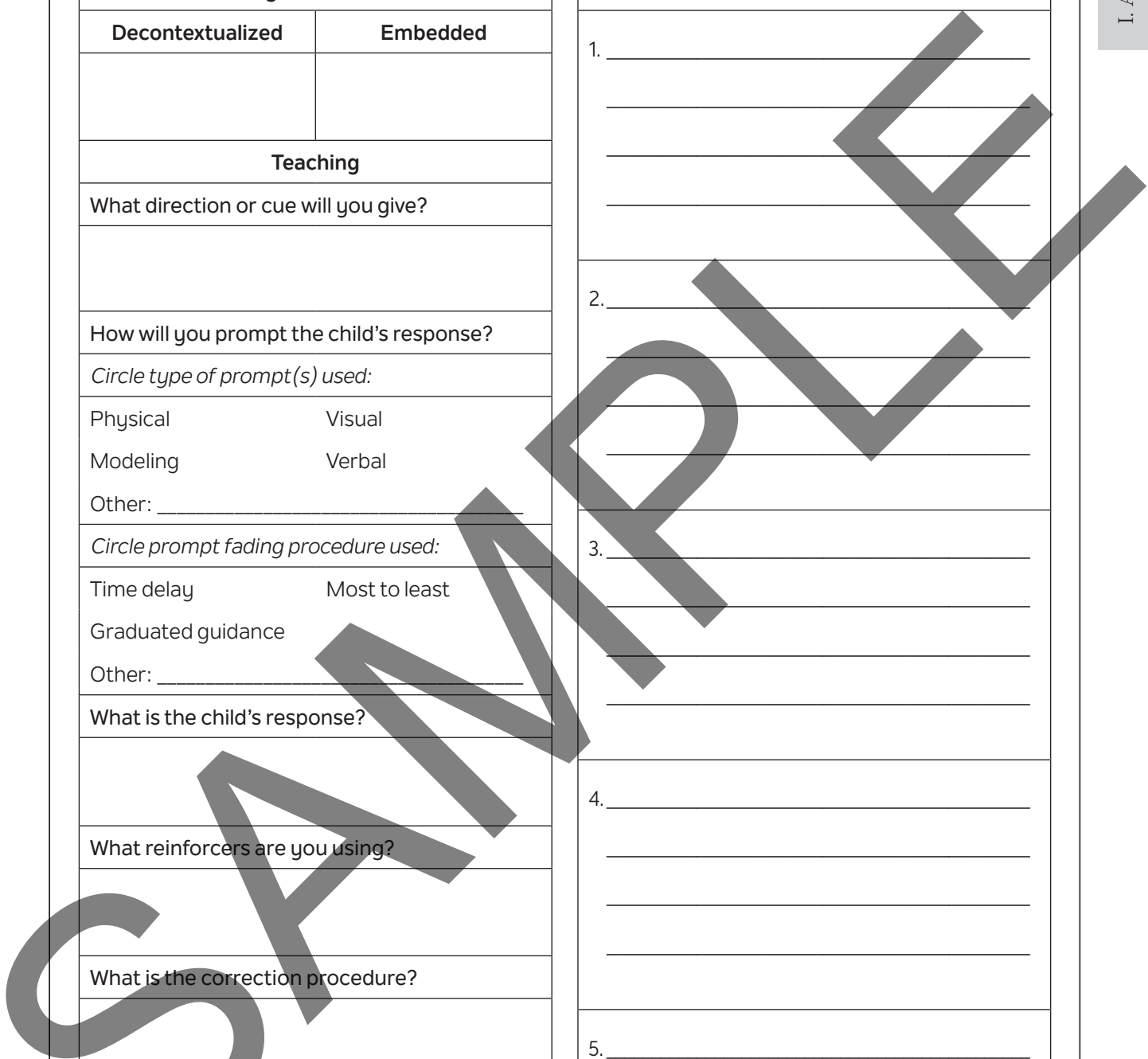
	Acquisition		Generalization		Maintenance	
	Start date	End date	Start date	End date	Date/data	Date/data
1						
2						
3						

LESSON PLAN: Mealtime

Eats with a Spoon/Fork

Settings and materials	
Decontextualized	Embedded
Teaching	
What direction or cue will you give?	
How will you prompt the child's response?	
<i>Circle type of prompt(s) used:</i>	
Physical	Visual
Modeling	Verbal
Other: _____	
<i>Circle prompt fading procedure used:</i>	
Time delay	Most to least
Graduated guidance	
Other: _____	
What is the child's response?	
What reinforcers are you using?	
What is the correction procedure?	
How will you collect data? (<i>circle answer</i>)	
Percentage correct	Frequency
Duration	Permanent product
Other: _____	

Sets
1. _____ _____ _____ _____
2. _____ _____ _____ _____
3. _____ _____ _____ _____
4. _____ _____ _____ _____
5. _____ _____ _____ _____



INSTRUCTIONAL PROGRAM SHEET: Mealtime*Eats a Variety of Food*

Child: _____ Date initiated: _____ Date completed: _____

Objective: When presented with foods not currently in child's repertoire and told, "Time to eat," Child eats the foods.**Mastery criterion:**

- Eats ____ new foods (this number depends on team decision)
- Eats three bites of each new food
- At least 2 days for each food

Generalization:**People:** At least two adults**Settings:** At least two settings**Materials:** At least three different meals (breakfast, lunch, and dinner)**Things to consider:** Consider extra exposure to food (e.g., do cooking projects, play with food in sensory table). Consider family preferences when choosing foods to introduce.**Teaching sequence**

1. Bowl of new food is near child's plate for mealtime
2. Food is on child's plate for at least 5 seconds
3. Food is on child's plate for at least 10 seconds
4. Child tolerates food on plate for an indefinite amount of time
5. Child touches food with finger
6. Child holds food in hand
7. Child touches food to lips
8. Child touches food to tongue
9. Child licks food
10. Child takes a small bite of food
11. Child takes a regular size bite of food
12. Child chews and swallows more than one bite
13. Child eats the food provided

Adapted from Ogata, Beth, & Lucas, Betty. (1999). *Autism, Nutrition, and Picky Eating*. In Yang, Yuchi, Lucas, Betty, & Feucht, Sharon (Eds.). *Nutritional Interventions for Children with Special Health Care Needs*. (3rd ed.) (pp. 272–273). Seattle, WA: Washington State Department of Health.

PROGRAMMING LOG

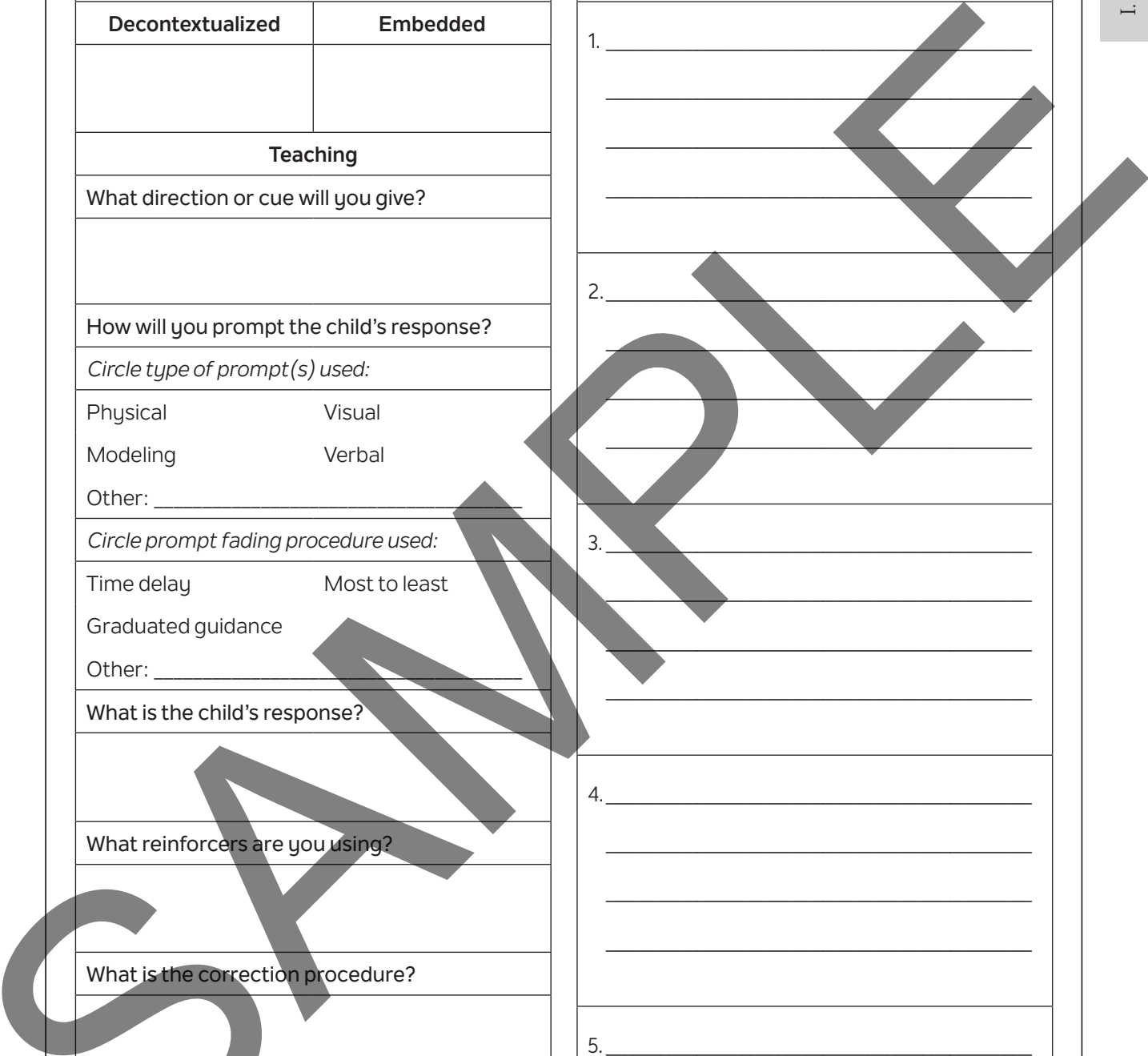
	Acquisition		Generalization		Maintenance	
	Start date	End date	Start date	End date	Date/data	Date/data
1						
2						
3						
4						

LESSON PLAN: Mealtime

Eats a Variety of Food

Settings and materials	
Decontextualized	Embedded
Teaching	
What direction or cue will you give?	
How will you prompt the child's response?	
<i>Circle type of prompt(s) used:</i>	
Physical	Visual
Modeling	Verbal
Other: _____	
<i>Circle prompt fading procedure used:</i>	
Time delay	Most to least
Graduated guidance	
Other: _____	
What is the child's response?	
What reinforcers are you using?	
What is the correction procedure?	
How will you collect data? (<i>circle answer</i>)	
Percentage correct	Frequency
Duration	Permanent product
Other: _____	

Sets
1. _____ _____ _____ _____
2. _____ _____ _____ _____
3. _____ _____ _____ _____
4. _____ _____ _____ _____
5. _____ _____ _____ _____



INSTRUCTIONAL PROGRAM SHEET: Mealtime*Remains at the Table During Meals*

Child: _____ Date initiated: _____ Date completed: _____

Objective: During snack or lunch at school, the child remains with the group at the table until the child asks to leave, adult excuses child, or until the natural end of the meal.**Mastery criterion:**

- Remains at the table for the duration of the meal, asks to leave or is excused
- Three consecutive meals
- At least 2 days

Generalization:**People:** At least two adults**Settings:** At least two settings**Materials:** At least three different meals (e.g., breakfast, lunch, dinner)**Things to consider:** May also teach eating skills. Materials may be brought to the table, such as a book, to keep child occupied or as a point of reference for mutual sharing.**Teaching sequence**

1. Considering child's baseline, remains at the table for an additional period of time (e.g., 15 seconds to 1 minute)
2. Child asks to be excused (e.g., "All done." "Can I be excused?")
3. Remains at the table, doubling the amount of time from the first set, may ask to be excused or told the meal time is all done
4. Double the amount of time from previous set
5. Consider sitting for entire duration or meal

PROGRAMMING LOG

	Acquisition		Generalization		Maintenance	
	Start date	End date	Start date	End date	Date/data	Date/data
1						
2						
3						
4						
5						

LESSON PLAN: Mealtime

Remains at the Table During Meals

Settings and materials	
Decontextualized	Embedded
Teaching	
What direction or cue will you give?	
How will you prompt the child's response?	
<i>Circle type of prompt(s) used:</i>	
Physical	Visual
Modeling	Verbal
Other: _____	
<i>Circle prompt fading procedure used:</i>	
Time delay	Most to least
Graduated guidance	
Other: _____	
What is the child's response?	
What reinforcers are you using?	
What is the correction procedure?	
How will you collect data? (<i>circle answer</i>)	
Percentage correct	Frequency
Duration	Permanent product
Other: _____	

Sets
1. _____ _____ _____
2. _____ _____ _____
3. _____ _____ _____
4. _____ _____ _____
5. _____ _____ _____

