AFIRM

Autism Focused Intervention Resources & Modules

MD

EBP Brief Packet: Modeling

UNC Frank Porter Graham Child Development Institute
Autism Focused Intervention Resources & Modules
Sam, A., & AFIRM Team, Updated 2024

The National Professional Development Center on Autism

The National Clearinghouse on Autism Evidence & Practice
NCAEP • BRIDGING PRACTICE AND SCIENCE

UNC FRANK PORTER GRAHAM CHILD DEVELOPMENT INSTITUTE

Overview of Content

1. **Table of MD Contents:** This list details the specific MD resources that apply to Modeling.
2. **What is MD:** A quick summary of salient features of Modeling, including what it is, who it can be used with, what skills it has been used with, and settings for instruction.
3. **Evidence-base:** The evidence-base details the National Clearinghouse on Autism Evidence and Practice (NCAEP) criteria for inclusion as an evidence-based practice and the specific studies that meet the criteria for Modeling.
4. **Planning Checklist:** This checklist details the steps for planning for Modeling, including what prerequisite learning of practices are needed, collecting baseline data of the interfering behavior if needed, and what materials/resources are needed.
5. **Other Resources:** Other resources may include decision trees, checklists, and/or template forms that will support the use of Modeling.
6. **Step-by-Step Guide:** Use this guide as an outline for how to plan for, use, and monitor Modeling. Each step includes a brief description as a helpful reminder while learning the process.
7. **Implementation Checklist:** Use this checklist to determine if Modeling are being implemented as intended.
8. **Monitoring Progress Checklist:** Use this form as a method for collecting and analyzing data to determine if the learner on the spectrum is making progress towards the interfering behavior.
9. **Tip Sheet for Professionals:** Use this tip sheet, intended for professionals working with learners on the spectrum, as a supplemental resource to help provide basic information about Modeling.
10. **Parent Guide:** Use this guide intended for parents or family members of learners on the spectrum to help them understand basic information about Modeling and how it is being used with their child.
11. **Additional Resources:** This list provides additional information for learning more about Modeling as well as resources.
12. **CEC Standards:** This list details the specific CEC standards that apply to Modeling.
13. **Glossary:** This glossary contains key terms that apply specifically to Modeling.
14. **References:** This list details the specific references used for developing this MD module in numerical order.

Table of Contents

MODELING

WHAT IS MD?

Modeling can be used to increase a learner's ability to perform a target behavior. Modeling involves the learner observing someone correctly performing a target behavior. The demonstration of the behavior before the learner is expected to demonstrate the behavior serves as a primer for the behavior. In addition, modeling can be used as a prompt in order to provide extra support to the learner after the direction has been provided and the child is trying to use the behavior. Modeling is most effective when it is used with the evidence-based practices of prompting and reinforcement.[1]

EVIDENCE-BASE:

Based upon the 2020 systematic review conducted by the National Clearinghouse on Autism Evidence and Practice (NCAEP), Modeling is a foundational intervention that meets the evidence-based practice criteria with 26 single case design and 2 group design studies. Modeling has been effective for early intervention (0-2 years), preschoolers (3-5 years), elementary school learners (6-11 years), middle school learners (12-14 years), high schoolers (15-18 years), and young adults (19-22 years) on the spectrum. Studies included the 2020 EBP report (Steinbrenner et al., 2020) detail how modeling can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, behavior, communication, joint attention, motor, play, school readiness, social, and vocational.

HOW IS MD BEING USED?

Modeling can be used by a variety of professionals, including teachers, special educators, therapists, paraprofessionals, and early interventionists in educational and community-based environments. Parents and family members also can use Modeling in the home.

Suggested Citation:
Sam, A., & AFIRM Team. (2024). *Modeling, Updated*. The University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Institute, Autism Focused Intervention Resources and Modules. https://afirm.fpg.unc.edu

EVIDENCE-BASE

The National Clearinghouse on Autism Evidence and Practice has adopted the following criteria to determine if a practice is evidence-based. The 2020 EBP report (Steinbrenner et al., 2020) provides more information about the systematic review process.

Efficacy must be established through high-quality, peer-reviewed research in scientific journals using:

- At least 2 randomized or quasi-experimental group design studies, or
- At least 5 single subject/case design studies, or a
- Combination of evidence of 1 randomized or quasi-experimental group design study and 3 single subject/case design studies

OVERVIEW:

Based upon the 2020 systematic review conducted by the National Clearinghouse on Autism Evidence and Practice (NCAEP), Modeling is a foundational intervention that meets the evidence-based practice criteria with 26 single case design and 2 group design studies. Modeling has been effective for early intervention (0-2 years), preschoolers (3-5 years), elementary school learners (6-11 years), middle school learners (12-14 years), high schoolers (15-18 years), and young adults (19-22 years) on the spectrum. Studies included the 2020 EBP report (Steinbrenner et al., 2020) detail how modeling can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, behavior, communication, joint attention, motor, play, school readiness, social, and vocational.

In the table below, the instructional outcomes identified by the evidence base are shown by age of participants.

Age	Academic	Adaptive	Behavior	Communication	Joint Attention	Motor	Play	School Readiness	Social	Vocational
0-2				Yes		Yes			Yes	
3-5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
6-11	Yes	Yes	Yes	Yes			Yes	Yes	Yes	
12-14	Yes			Yes				Yes	Yes	
15-18	Yes			Yes						
19-22				Yes					Yes	Yes

EARLY INTERVENTION (0-2 YEARS):

Landa, R. J., Holman, K. C., O'Neill, A. H., & Stuart, E. A. (2011). Intervention targeting development of socially synchronous engagement in toddlers with autism spectrum disorder: A randomized controlled trial. *Journal of Child Psychology and Psychiatry*, *52*(1), 13-21. https://doi.org/10.1111/j.1469-7610.2010.02288.x

*** McDowell, L. S., Gutierrez, A., & Bennett, K. D. (2015). Analysis of live modeling plus prompting and video modeling for teaching imitation to children with autism. *Behavioral Interventions, 30*(4), 333-351. https://doi.org/10.1002/bin.1419**

Miller, S. A., Rodriguez, N. M., & Rourke, A. J. (2015). Do mirrors facilitate acquisition of motor imitation in children diagnosed with autism? *Journal of Applied Behavior Analysis, 48*(1), 194-8. https://doi.org/10.1002/jaba.187

* Williams, G., Pérez-González, L. A., & Vogt, K. (2003). The role of specific consequences in the maintenance of three types of questions. *Journal of Applied Behavior Analysis, 36*(3), 285-296. https://doi.org/10.1901/jaba.2003.36-285

PRESCHOOL (3-5 YEARS):

Bremer, E., Balogh, R., & Lloyd, M. (2015). Effectiveness of a fundamental motor skill intervention for 4-year-old children with autism spectrum disorder: A pilot study. *Autism, 19*(8), 980-991. https://doi.org/10.1177/1362361314557548

Carlson, B., McLaughlin, T., Derby, K. M., & Blecher, J. (2009). Teaching preschool children with autism and developmental delays to write. *Electronic Journal of Research in Educational Psychology*, *7*(1), 225-238. https://doi.org/10.25115/ejrep.v7i17.1313

*** Ergenekon, Y., Tekin-Iftar, E., Kapan, A., & Akmanoglu, N. (2014). Comparison of video and live modeling in teaching response chains to children with autism. *Education and Training in Autism and Developmental Disabilities, 49*(2), 200-213.**

Ganz, J. B., Flores, M. M., & Lashley, E. E. (2011). Effects of a treatment package on imitated and spontaneous verbal requests in children with autism. *Education and Training in Autism and Developmental Disabilities*, *46*(4), 596-606.

*** Greenberg, J. H., Lau, W., & Lau, S. (2016). Teaching appropriate play to replace stereotypy using a treatment package with students having autism. *Global Education Review, 3*(3), 94-104.**

*** Knight, V. F., Smith, B. R., Spooner, F., & Browder, D. (2012). Using explicit instruction to teach science descriptors to students with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 42*(3), 378-89. https://doi.org/10.1007/s10803-011-1258-1**

Leaf, J. B., Oppenheim-Leaf, M. L., Townley-Cochran, D., Leaf, J. A., Alcalay, A., Milne, C., Kassardjian, A., Tsuji, K., Dale, S., Leaf, R., Taubman, M., & McEachin, J. (2016). Changing preference from tangible to social activities through an observation procedure. Journal of Applied Behavior Analysis, 49(1), 49-57. https://doi.org/10.1002/jaba.276

Matson, J. L., Box, M. L., & Francis, K. L. (1992). Treatment of elective mute behavior in two developmentally delayed children using modeling and contingency management. *Journal of Child Psychology and Psychiatry*, *23*(3), 221-229. https://doi.org/10.1016/0005-7916(92)90039-L

* Matson, J. L., Taras, M. E., Sevin, J. A., Love, S. R., & Fridley, D. (1990). Teaching self-help skills to autistic and mentally retarded children. *Research in Developmental Disabilities*, *11*(4), 361-378. https://doi.org/10.1016/0891-4222(90)90023-2

*** McDowell, L. S., Gutierrez, A., & Bennett, K. D. (2015). Analysis of live modeling plus prompting and video modeling for teaching imitation to children with autism. *Behavioral Interventions, 30*(4), 333-351. https://doi.org/10.1002/bin.1419**

*** O'Reilly, M., Fragale, C., Gainey, S., Kang, S., Koch, H., Shubert, J., Zein, F. E., Longino, D., Chung, M., Xu, Z., White, P., Lang, R., Davis, T., Rispoli, M., Lancioni, G., Didden, R., Healy, O., Kagohara, D., van der Meer, L., & Sigafoos, J. (2012). Examination of an antecedent communication intervention to reduce tangibly maintained challenging behavior: A controlled analog analysis. *Research in Developmental Disabilities, 33*(5), 1462-8. https://doi.org/10.1016/j.ridd.2012.03.017**

Taylor, B. A., DeQuinzio, J. A., & Stine, J. (2012). Increasing observational learning of children with autism: A preliminary analysis. *Journal of Applied Behavior Analysis, 45*(4), 815-820. https://doi.org/10.1901/jaba.2012.45-815

Whalen, C., & Schreibman, L. (2003). Joint attention training for children with autism using behavior modification procedures. *Journal of Child Psychology and Psychiatry*, *44*(3), 456-468. https://doi.org/10.1111/1469-7610.00135

* Williams, G., Pérez-González, L. A., & Vogt, K. (2003). The role of specific consequences in the maintenance of three types of questions. *Journal of Applied Behavior Analysis, 36*(3), 285-296. https://doi.org/10.1901/jaba.2003.36-285

ELEMENTARY SCHOOL (6-11 YEARS):

*** Ainsworth, M. K., Evmenova, A. S., Behrmann, M., & Jerome, M. (2016). Teaching phonics to groups of middle school students with autism, intellectual disabilities and complex communication needs. *Research in Developmental Disabilities, 56*, 165-76. https://doi.org/10.1016/j.ridd.2016.06.001**

*** Barnes, C. S., & Rehfeldt, R. A. (2013). Effects of fluency instruction on selection-based and topography-based comprehension measures. *Research in Autism Spectrum Disorders, 7*(6), 639-647. https://doi.org/10.1016/j.rautism.2013.02.010**

Cihak, D. F., & Foust, J. L. (2008). Comparing number lines and touch points to teach addition facts to students with autism. *Focus on Autism and Other Developmental Disabilities*, *23*(3), 131-137. https://doi.org/10.1177/1088357608318950

*** DeQuinzio, J. A., & Taylor, B. A. (2015). Teaching children with autism to discriminate the reinforced and nonreinforced responses of others: implications for observational learning. *Journal of Applied Behavior Analysis, 48*(1), 38-51. https://doi.org/10.1002/jaba.192**

Dixon, M. R., Belisle, J., Munoz, B. E., Stanley, C. R., & Rowsey, K. E. (2017). Teaching metaphorical extensions of private events through rival-model observation to children with autism. *Journal of Applied Behavior Analysis, 50*(4), 744-749. https://doi.org/10.1002/jaba.418

*** Ergenekon, Y., Tekin-Iftar, E., Kapan, A., & Akmanoglu, N. (2014). Comparison of video and live modeling in teaching response chains to children with autism. *Education and Training in Autism and Developmental Disabilities, 49*(2), 200-213.**

* Gena, A., Krantz, P. J., McClannahan, L. E., & Poulson, C. L. (1996). Training and generalization of affective behavior displayed by youth with autism. *Journal of Applied Behavior Analysis*, *29*(3), 291-304. https://doi.org/10.1901/jaba.1996.29-291

*** Greenberg, J. H., Lau, W., & Lau, S. (2016). Teaching appropriate play to replace stereotypy using a treatment package with students having autism. *Global Education Review, 3*(3), 94-104.**

Grow, L. L., Kodak, T., & Clements, A. (2017). An evaluation of instructive feedback to teach play behavior to a child with autism spectrum disorder. *Behavior Analysis in Practice, 10*(3), 313-317. https://doi.org/10.1007/s40617-016-0153-9

*** Knight, V. F., Smith, B. R., Spooner, F., & Browder, D. (2012). Using explicit instruction to teach science descriptors to students with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 42*(3), 378-89. https://doi.org/10.1007/s10803-011-1258-1**

Lee, R., & Sturmey, P. (2014). The effects of script-fading and a Lag-1 schedule on varied social responding in children with autism. *Research in Autism Spectrum Disorders, 8*(4), 440-448. https://doi.org/10.1016/j.rautism.2014.01.003

* Matson, J. L., Taras, M. E., Sevin, J. A., Love, S. R., & Fridley, D. (1990). Teaching self-help skills to autistic and mentally retarded children. *Research in Developmental Disabilities*, *11*(4), 361-378. https://doi.org/10.1016/0891-4222(90)90023-2

*** O'Reilly, M., Fragale, C., Gainey, S., Kang, S., Koch, H., Shubert, J., Zein, F. E., Longino, D., Chung, M., Xu, Z., White, P., Lang, R., Davis, T., Rispoli, M., Lancioni, G., Didden, R., Healy, O., Kagohara, D., van der Meer, L., & Sigafoos, J. (2012). Examination of an antecedent communication intervention to reduce tangibly maintained challenging behavior: A controlled analog analysis. *Research in Developmental Disabilities, 33*(5), 1462-8. https://doi.org/10.1016/j.ridd.2012.03.017**

*** Schenning, H., Knight, V., & Spooner, F. (2013). Effects of structured inquiry and graphic organizers on social studies comprehension by students with autism spectrum disorders. *Research in Autism Spectrum Disorders, 7*(4), 526-540. https://doi.org/10.1016/j.rautism.2012.12.007**

*** Smith, B. R., Spooner, F., & Wood, C. L. (2013). Using embedded computer-assisted explicit instruction to teach science to students with autism spectrum disorder. *Research in Autism Spectrum Disorders, 7*(3), 433-443. https://doi.org/10.1016/j.rautism.2012.10.010**

* Williams, G., Pérez-González, L. A., & Vogt, K. (2003). The role of specific consequences in the maintenance of three types of questions. *Journal of Applied Behavior Analysis, 36*(3), 285-296. https://doi.org/10.1901/jaba.2003.36-285

MIDDLE SCHOOL (12-14 YEARS):

*** Ainsworth, M. K., Evmenova, A. S., Behrmann, M., & Jerome, M. (2016). Teaching phonics to groups of middle school students with autism, intellectual disabilities and complex communication needs. *Research in Developmental Disabilities, 56*, 165-76. https://doi.org/10.1016/j.ridd.2016.06.001**

*** Barnes, C. S., & Rehfeldt, R. A. (2013). Effects of fluency instruction on selection-based and topography-based comprehension measures. *Research in Autism Spectrum Disorders, 7*(6), 639-647. https://doi.org/10.1016/j.rautism.2013.02.010**

*** DeQuinzio, J. A., & Taylor, B. A. (2015). Teaching children with autism to discriminate the reinforced and nonreinforced responses of others: implications for observational learning. *Journal of Applied Behavior Analysis, 48*(1), 38-51. https://doi.org/10.1002/jaba.192**

* Gena, A., Krantz, P. J., McClannahan, L. E., & Poulson, C. L. (1996). Training and generalization of affective behavior displayed by youth with autism. *Journal of Applied Behavior Analysis*, *29*(3), 291-304. https://doi.org/10.1901/jaba.1996.29-291

*** Schenning, H., Knight, V., & Spooner, F. (2013). Effects of structured inquiry and graphic organizers on social studies comprehension by students with autism spectrum disorders. *Research in Autism Spectrum Disorders, 7*(4), 526-540. https://doi.org/10.1016/j.rautism.2012.12.007**

Singh, B. D., Moore, D. W., Furlonger, B. E., Anderson, A., Busacca, M. L., & English, D. L. (2017). Teaching reading comprehension skills to a child with autism using behaviour skills training. *Journal of Autism and Developmental Disorders*, *47*(10), 3049-3058. https://doi.org/10.1007/s10803-017-3229-7

*** Smith, B. R., Spooner, F., & Wood, C. L. (2013). Using embedded computer-assisted explicit instruction to teach science to students with autism spectrum disorder. *Research in Autism Spectrum Disorders, 7*(3), 433-443. https://doi.org/10.1016/j.rautism.2012.10.010**

HIGH SCHOOL (15-18 YEARS):

*** Ainsworth, M. K., Evmenova, A. S., Behrmann, M., & Jerome, M. (2016). Teaching phonics to groups of middle school students with autism, intellectual disabilities and complex communication needs. *Research in Developmental Disabilities, 56*, 165-76. https://doi.org/10.1016/j.ridd.2016.06.001**

* Gena, A., Krantz, P. J., McClannahan, L. E., & Poulson, C. L. (1996). Training and generalization of affective behavior displayed by youth with autism. *Journal of Applied Behavior Analysis*, *29*(3), 291-304. https://doi.org/10.1901/jaba.1996.29-291

YOUNG ADULTS (19-22 YEARS):

* Gena, A., Krantz, P. J., McClannahan, L. E., & Poulson, C. L. (1996). Training and generalization of affective behavior displayed by youth with autism. *Journal of Applied Behavior Analysis*, *29*(3), 291-304. https://doi.org/10.1901/jaba.1996.29-291

Rigsby-Eldredge, M., & McLaughlin, T. F. (1992). The effects of modeling and praise on self-initiated behavior across settings with two adolescent students with autism. *Journal of Developmental and Physical Disabilities*, *4*(3), 205-218. https://doi.org/10.1007/BF01046965

Notes: * denotes the study has participants in at least two age ranges
Bold denotes new studies since 2011 (2012 till 2017)

Modeling Types

MODELING USED AS A *PRIME*:

Prime - the desired behavior or skill is modeled **before** the learner is expected to demonstrate the behavior

1. Model demonstrates the target behavior/skill
2. Learner imitates or performs the target behavior/skill
3. Provide reinforcement

Prime
Demonstrate the target skill/behavior for the learner

↓

Learner Response
Learner imitates the target skill/behavior

↓

Consequence
Feedback/Reinforcement provided by teachers & practitioners

MODELING USED AS A *PROMPT*:

Prompt - the model provides extra support to the learner **after** the direction has been given and as the learner attempts to use the skill or behavior
Controlling prompt is the words and/or actions said/used to ensure that the learner will perform the target skill successfully. It can be a gestural, verbal, visual, model, or physical prompt.

1. Use controlling prompt, the least intrusive prompt which consistently ensures the learner will successfully perform the target behavior/skill, to direct the learner to use the target behavior/skill.
2. If learner performs the target behavior/skill, provide reinforcement.
3. If learner does not perform the target behavior/skill, follow modeling used as a prime (see above).

Prompt
Direct the learn to use target skill/behavior

↓

If NO Learner Response
Demonstrate the target skill/behavior for the learner

↓

Learner Response
Learner imitates the target skill/behavior

↓

Consequence
Feedback/Reinforcement provided by teachers & practitioners

Reinforcer Sampling & Checklist

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this worksheet and checklist to identify and select reinforcers/rewards based on the learner's preferred items, interests, and activities for **Positive Reinforcement** and **Token Economy**.

CONDUCT A REINFORCER SAMPLING:

1. Sit in front of the learner and hold up two items. Ask the learner to "Pick one."
2. Wait 10 seconds for the learner to indicate selection in manner that is appropriate for the learner (e.g., verbalization, pointing, using an augmentative communication device).
3. Place the selected object in a container for learner's selection and non-selected item in the not selected container.
4. Repeat steps 1 through 3 until half of the objects presented are selected.

Item 1	Selected?	Item 2	Selected?
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No

LIST SELECTED REINFORCERS:

LIST POTENTIAL REINFORCERS:

AGE APPROPRIATE?

1. What natural reinforcers could be used?

   Yes No

2. What activities, objects, and/or foods does the learner select independently?

   Yes No

3. What phrases or gestures seem to produce a pleasant response from the learner?

   Yes No

4. What does the learner say they would like to work for (if appropriate)?

   Yes No

5. What reinforcers were identified by parents/family members and/or team members as being successful in the past?

   Yes No

6. Does the learner require additional adaptations/ modifications/supports? Such as visual supports or a communication device?

   Yes No

7. Have reinforcers/rewards for the learner been identified based on the learner's interests/preferred items and/or activities?

   Yes No

8. Are additional materials and/or resources for using Functional Behavior Assessment ready and available?

   Yes No

FOODS FOR SNACKS/MEALTIME ROUTINES:

- ❑ Cheese
- ❑ Chicken Nuggets
- ❑ Chips
- ❑ French Fries
- ❑ Fruit
- ❑ Goldfish
- ❑ Ice Cream
- ❑ Pizza
- ❑ Pretzels
- ❑ Other:
- ❑ Other:
- ❑ Other:

GAMES FOR PLAY/RECESS ROUTINES:

- ❑ Burrito games with a blanket
- ❑ Chase
- ❑ Pat-a-Cake
- ❑ Peek-a-Boo
- ❑ Tickles
- ❑ Other:
- ❑ Other:
- ❑ Other:
- ❑ Other:

TOYS FOR PLAY/RECESS ROUTINES:

- ❑ Books
- ❑ Cars/Trains/Trucks
- ❑ Computer
- ❑ Doll house
- ❑ Legos
- ❑ Noisy toys
- ❑ Phones
- ❑ Puzzles
- ❑ Remote controlled toys
- ❑ Other:
- ❑ Other:
- ❑ Other:

SPECIAL INTERESTS FOR ACTIVITIES/ROUTINES:

- ❑ Book Character:
- ❑ Book:
- ❑ Cars, Trains, Trucks
- ❑ Computers/Technology
- ❑ Dinosaurs
- ❑ Letters
- ❑ Movie Character:
- ❑ Movie:
- ❑ Music
- ❑ Numbers
- ❑ Real-Life Person:
- ❑ TV Show Character:
- ❑ TV Show:
- ❑ Video Game:
- ❑ Other:
- ❑ Other:
- ❑ Other:

Prompting Hierarchy

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Interfering Behavior: _____
Directions: Use this checklist to determine order of prompts based on the learner's needs and the target skill.

PROMPTS:

- **Gestural** – a physical movement that provides the learner with information about how to perform the target skill/behavior
- **Independent** – the learner can perform the target skill/behavior without assistance or support from others
- **Model** – demonstrating the correct way to perform the target skill/behavior for the learner
- **Physical** – hands-on assistance given to the learner to support them to perform the target skill/behavior
- **Verbal** – any spoken words direct to the learner to help them perform the target skill/behavior
- **Visual** – a picture, icon, or physical object used to provide the learner with information on how to perform the target skill/behavior

Level	Prompt	Instructions
Level 1	Independent	
Level 2		
Level 3		
Level 4		
Level 5		
Level 6		

Pre-Assessment

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this worksheet to take notes on the learner's behavior to determine if they have prerequisite skills needed for modeling.

Time	Activity	Behavior

Planning Checklist

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Complete this checklist to determine which type of modeling to use with the learner on the spectrum as well as if MD is ready to be implemented.

ASSESS THE LEARNER'S CURRENT ABILITIES:

- ❑ **Imitate others:** Is the learner able to imitate others when a model is provided?
- ❑ **Sustain attention:** Can the learner sustain attention long enough to observe the modeled behavior?
- ❑ **Prerequisite skills:** Does the learner have needed prerequisite skills/abilities?

If you DID NOT check off any of these questions, modeling MIGHT NOT be helpful to use with the learner.

PLANNING:

- ❑ Has the target goal/behavior/skill been identified?
- ❑ Has baseline data and/or a functional behavior assessment been collected through direct observation of the learner?
- ❑ Is the target goal/behavior/skill measurable and observable? Does it clearly state **what** the target goal/behavior/skill is, **when** it will occur, and **how** team members/observers will know it has been mastered?
- ❑ Is Modeling appropriate for the learner's target goal/behavior/skill?
- ❑ Does the learner require additional adaptations/modifications/supports? Such as a communication device?
- ❑ Have reinforcers/rewards for the learner been identified based on the learner's interests/preferred items and/or activities?
- ❑ Are additional materials and/or resources for using Modeling ready and available?

IDENTIFY THE CONTROLLING PROMPT:

Controlling prompt is the words and/or actions said/used to ensure that the learner will perform the target skill successfully. It can be a gestural, verbal, visual, model, or physical prompt.

Try out different prompts to see which ones are successful in getting the learner to complete the task consistently.

Prompt	Description	Level of Success
Gestural		
Model		
Physical		
Verbal		
Visual		

Selected controlling prompt:

IDENTIFY TIMES & ACTIVITIES TO USE MODELING:

Prompt	Possible Opportunities
Individual work	
Small Group	
Embedded instruction	

IDENTIFY MODELS FOR THE LEARNER:

Peer Model Name	Setting/Time

DESCRIBE THE TRAINING THE PEER MODEL FROM ABOVE WILL RECEIVE:

SELECT MODELING PROCEDURE:

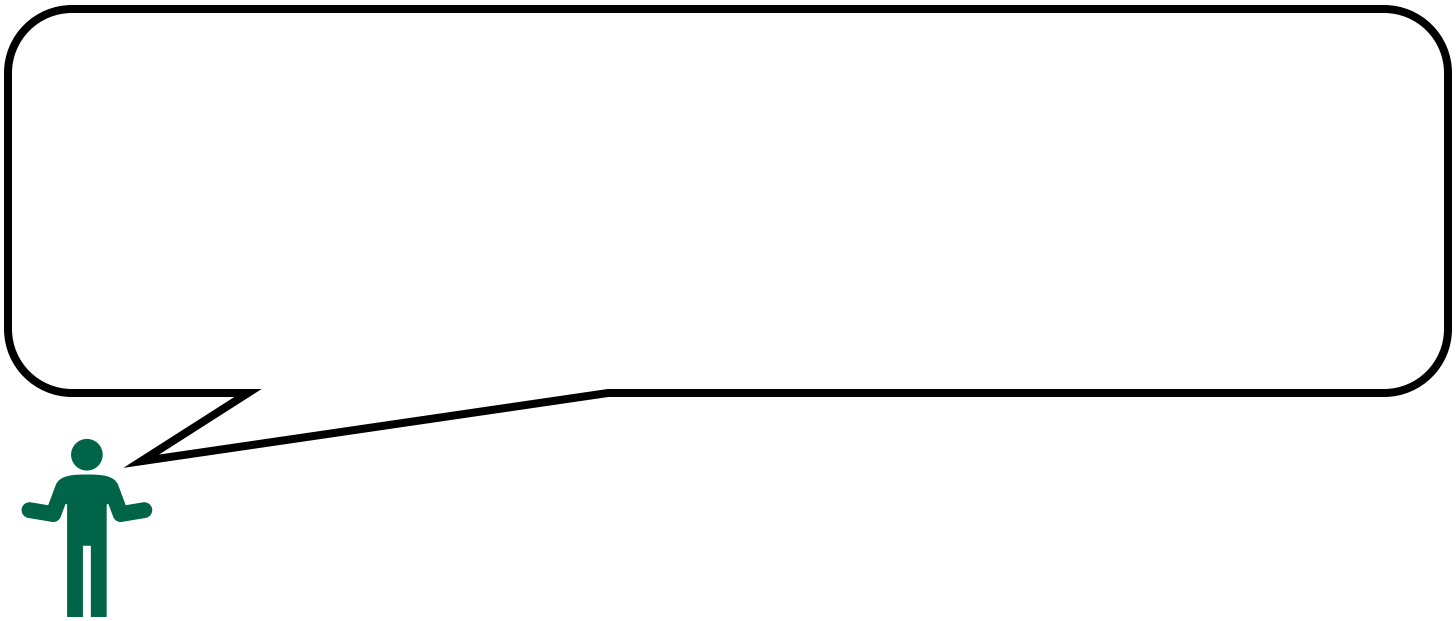
- ❑ Prime
- ❑ Prompt

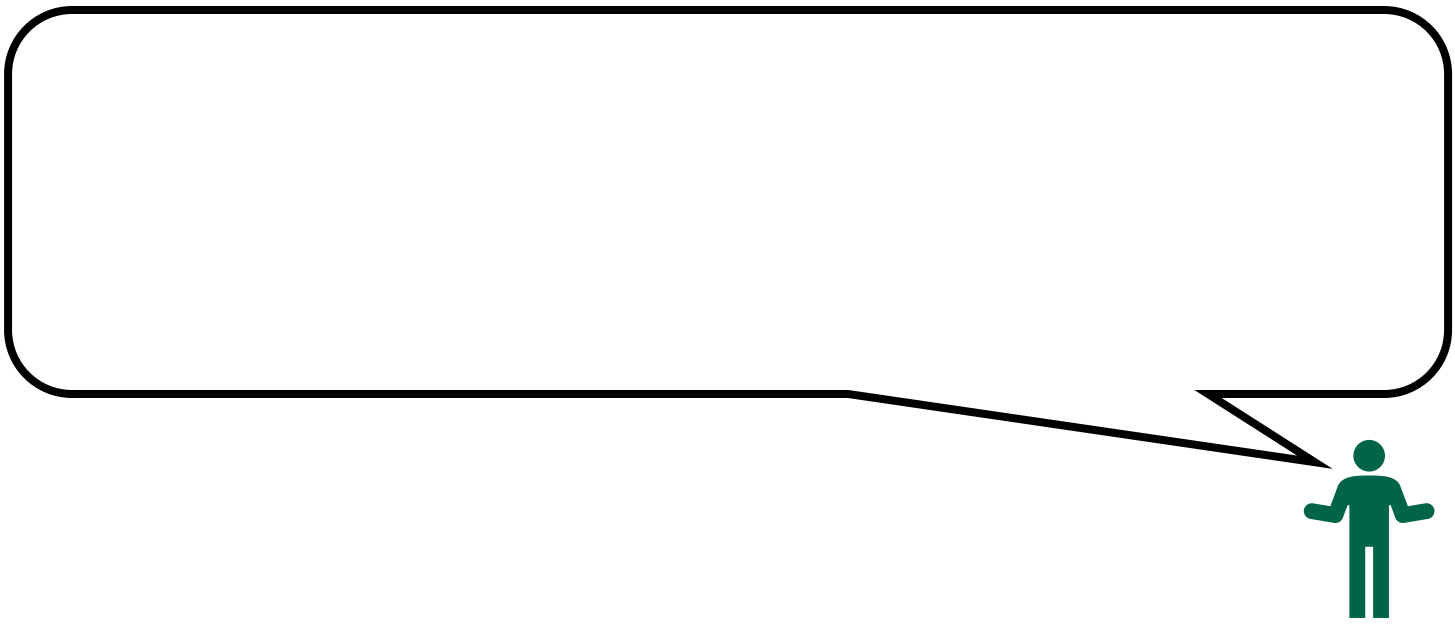
SELECT ADDITIONAL EBPS:

- ❑ Prompting
- ❑ Visual Supports
- ❑ Reinforcement
- ❑ Other: _____

Topic Bubble Script

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this sheet to train a peer or sibling to model the target behavior/skill to the learner. An adult (e.g., parent, teacher) can role play modeling with the peer or sibling to help them become comfortable serving as a model for the learner.



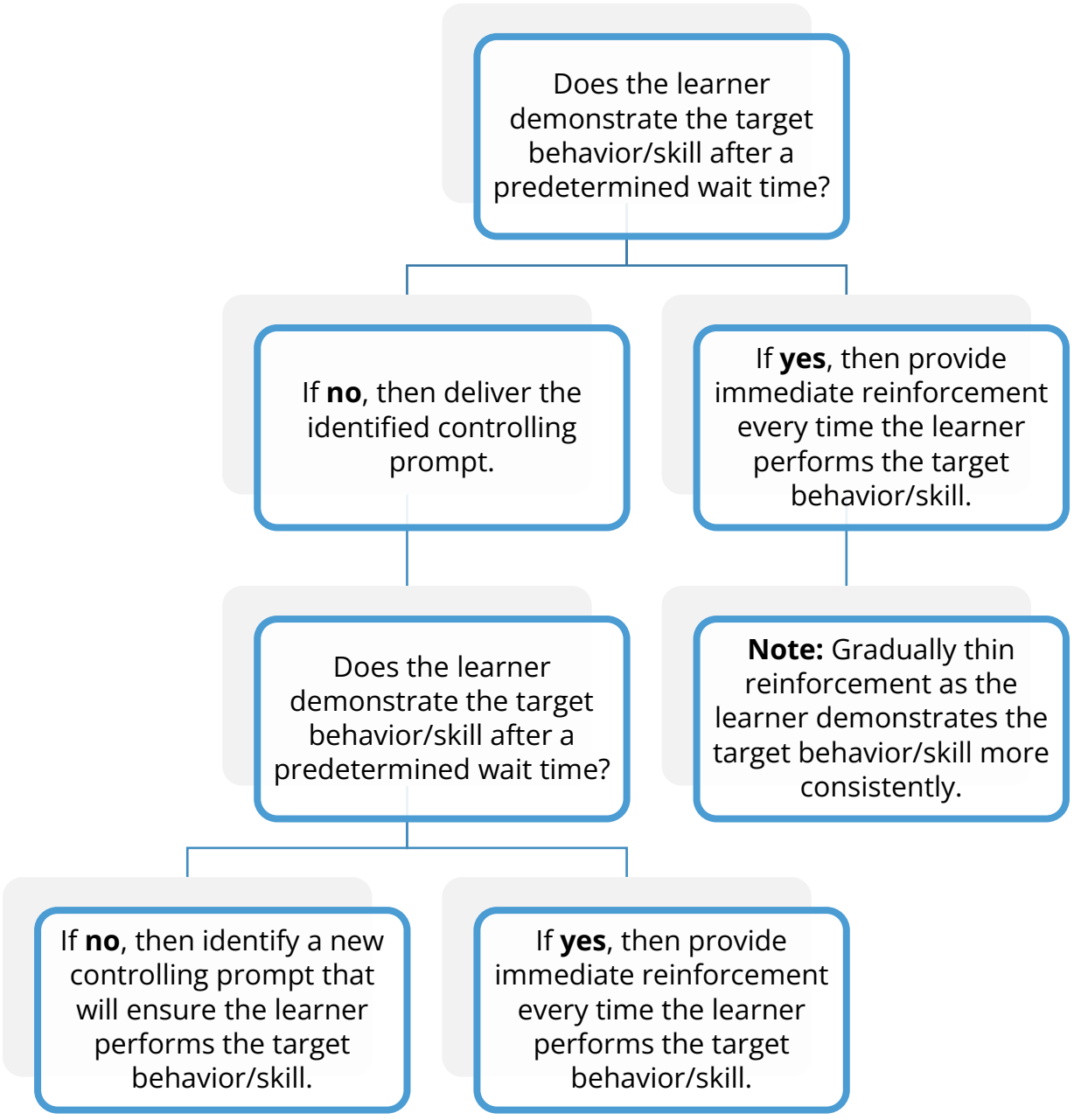


Written Cues Scripts

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this sheet to train a peer or sibling to model the target behavior/skill to the learner. An adult (e.g., parent, teacher) can role play modeling with the peer or sibling to help them become comfortable serving as a model for the learner.

Decision Tree

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Interfering Behavior: _____
Directions: Use this decision tree for using the controlling prompt with the learner. The controlling prompt is the least intrusive prompt which consistently ensures the learner will successfully perform the target behavior/skill. If the learner does engage in the behavior, provider the learner with reinforcement to encourage future use of the target behavior/skill.



Data Collection: Frequency (Intervals)

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Interfering Behavior: _____
Directions: Collect data on the frequency of the learner demonstrating the target goal/behavior/skill at time intervals (light green cells) to determine if the learner is making progress.

	Time Intervals (generally every 5 minutes)					
Date						**Total**

ANECDOTAL NOTES:

Data Collection: Event Sampling

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Collect data on the frequency of the learner demonstrating the target goal/behavior/skill to determine if the learner is making progress.

Date	Tally (each occurrence of the interfering behavior)	Total Tally

ANECDOTAL NOTES:

Monitoring Progress Checklist

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Complete this checklist to determine if the learner is making progress with using Modeling.

MONITORING PROGRESS:

- ❑ Is the target skill or behavior well defined?
- ❑ Is the skill or behavior measurable and observable?
- ❑ Has data been collected and analyzed?
- ❑ Is the skill or behavior too difficult for the learner?
- ❑ Was Modeling used with fidelity?
- ❑ Are there too many reinforcers?
- ❑ Are there too few reinforcers?
- ❑ Are all team members using Modeling in a consistent manner?
- ❑ Is Modeling occurring at a sufficient level to maintain the behavior or target skill?

ANECDOTAL NOTES:

Step-by-Step Guide

This step-by-step practice guide outlines how to plan for, use, and monitor Modeling.

BEFORE YOU BEGIN…

Each of the following points is important to address so that you can be sure Modeling is likely to address the target goal/behavior/skill of your learner on the spectrum.

HAVE YOU FOUND OUT MORE INFORMATION ABOUT…?

- ❑ Identifying the interfering behavior…?
- ❑ Collecting baseline data through direct observation…?
- ❑ Establishing a target goal or outcome that clearly states when the behavior will occur, what the target goal or outcome is, and how team members and/or observers will know when the skill is mastered…?

If the answer to any of the above questions is 'No,' review the process of how to select an appropriate EBP (https://afirm.fpg.unc.edu/selecting-EBP).

For more information about Modeling, please visit https://afirm.fpg.unc.edu/ .

Keep in mind that the two **Modeling** procedures are:

- Prime
- Prompt

While each procedure is different, the practice guide is applicable to all. When unique features are tied to a specific procedure, we will identify them through examples or cautions.

STEP 1: PLANNING FOR MD

The planning step details the initial steps and considerations involved to prepare for using Modeling with a learner on the spectrum.

1. **Assess learner's current abilities**
   In order to learn from a model, a learner must be able to:
   - Imitate others' behaviors,
   - Perform some of the component skills that make up the target skill, and
   - Sustain attention long enough to watch the model perform the target skill.
2. **Select additional EBPs**
   Prompting and reinforcement are commonly used with modeling. A controlling prompt is used with modeling to ensure the learner performs the target skill/behavior correctly.

3. **Identify times and activities for using modeling**
   To be effective, several times and activities should be identified throughout the day that will allow the learner to practice the target skill or behavior.

4. **Identify model for the learner**
   The best person to serve as the model is a peer who is physically similar to the learner and respected by the learner. If a peer cannot be a model, a teacher, paraprofessional, therapist, or parent can serve as an effective model.

5. **Provide training to model if appropriate**
   If a peer or sibling will model the identified target skill or behavior, then training might be needed. Adults can role play with the peer or sibling and provide scripts for the model to follow.
   Use the **Topic Bubble Script** to help peers know what to say.
   Use the **Written Cues Scripts** to develop words or phrases for peers to say.

6. **Determine modeling procedure**
   When used as a prime, the desired behavior or skill is modeled before the learner is expected to demonstrate the behavior. When used as a prompt, the model provides extra support to the learner after the direction has been given and as the learner attempts to use the skill or behavior.
   Complete the **Modeling Planning Worksheet** before using the procedure.

STEP 2: USING MD

This step details the process of implementing Modeling with a learner on the spectrum.

1. **Follow the unique steps for using selected model procedure**
   - Model as a prime:
     - Cue the learner to observe the model
     - Model demonstrates/performs behavior/skill o Wait for learner to imitate behavior.
   - Model as a prompt:
     - Direct learner to use behavior
     - If learner does not use behavior, model target behavior/skills

2. **Provide feedback to learner**
   If the learner demonstrates the target skill or behavior, the adult will provide immediate reinforcement to the learner. If the learner does not perform the target skill/behavior, deliver the identified controlling prompt. If the learner does engage in the behavior following the controlling prompt, provide the learner with reinforcement.
   Use the **Modeling Decision Tree** to guide your response.

3. **Thin reinforcement**
   When teaching a new target skill or behavior, a continuous reinforcement schedule should be used. As the learner acquires the skill, begin using an intermittent reinforcement schedule to thin the use of reinforcers.

STEP 3: MONITORING MD

The following step details how to monitor the use of Modeling with a learner on the spectrum and how to determine next steps based on the data.

1. **Collect and analyze data**
   By collecting data on target behaviors and skills, team members are able to determine if the learner is making progress. Two common forms of data collection commonly used with modeling are time sampling and event recording.

   Use the Data Collection Forms to collect data.

2. **Determine next steps based on learner progress**
   Collecting data will help team members decide about the effectiveness of using Modeling and whether the learner on the spectrum is making progress. If a learner is making progress based upon data collected, team members should continue to use the selected strategies.

   If team members determine that the learner is not making progress, consider the following:
   - Have team members received MD training or is additional training needed?
   - Is the target goal/behavior/skill well defined?
   - Is the target goal/behavior/skill measurable and observable?
   - Has enough time been devoted to using Modeling (frequency, intensity, and/or duration)?
   - Is the target goal/behavior/skill being targeted during appropriate routines and activities?
   - Is MD appropriate or a 'good fit' for the target behavior?
   - Are MD strategies addressing the target behavior?
   - Does the learner need additional supports?
   - Are the selected materials and activities intrinsically motivating for the learner?

   If these issues have been addressed and the learner on the spectrum continues not to show progress, consider selecting a different evidence-based practice to use with the learner on the spectrum.

Implementation Checklist: Prime

BEFORE YOU START, HAVE YOU…?

- ❑ Identifying the target goal/behavior/skill…?
- ❑ Collecting baseline data through direct observation…?
- ❑ Establishing a target goal or outcome that clearly states when the behavior will occur, what the target goal or outcome is, and how team members and/or observers will know when the skill is mastered…?

If the answer to any of the above questions is 'No,' review the process of how to select an appropriate EBP (https://afirm.fpg.unc.edu/selecting-EBP).

	Observation:	1	2	3	4	5
	Date:					
	Observer's Initials:					
	STEP 1: PLANNING					
1.1	Assess learner's current abilities					
1.2	Select additional EBPs					
1.3	Identify times and activities for using modeling					
1.4	Identify model for the learner					
1.5	Provide training to the model, if applicable					
1.6	Determine modeling procedure					
	STEP 2: USING					
2.1	Modeling as a **Prime:**					
2.1a	Cue learner to observe the model					
2.1b	Model demonstrates behavior/skill					
2.1c	Wait for learner to imitate behavior					
2.2	Provide feedback to learner using reinforcement and prompting					
2.3	Thin reinforcement					
	STEP 3: MONITORING					
3.1	Collect data on target behaviors					
3.2	Determine next steps based on learner progress					

Implementation Checklist: Prompt

BEFORE YOU START, HAVE YOU…?

- ❑ Identifying the target goal/behavior/skill…?
- ❑ Collecting baseline data through direct observation…?
- ❑ Establishing a target goal or outcome that clearly states when the behavior will occur, what the target goal or outcome is, and how team members and/or observers will know when the skill is mastered…?

If the answer to any of the above questions is 'No,' review the process of how to select an appropriate EBP (https://afirm.fpg.unc.edu/selecting-EBP).

	Observation:	1	2	3	4	5
	Date:					
	Observer's Initials:					
	STEP 1: PLANNING					
1.1	Assess learner's current abilities					
1.2	Select additional EBPs					
1.3	Identify times and activities for using modeling					
1.4	Identify model for the learner					
1.5	Provide training to the model, if applicable					
1.6	Determine modeling procedure					
	STEP 2: USING					
2.1	Modeling as a **Prompt:**					
2.1a	Direct learner to use behavior					
2.1b	If learner does not use behavior, model target behavior					
2.2	Provide feedback to learner using reinforcement and prompting					
2.3	Thin reinforcement					
	STEP 3: MONITORING					
3.1	Collect data on target behaviors					
3.2	Determine next steps based on learner progress					

Tip Sheet for Professionals

MODELING …

- Is a foundational evidence-based practice for children and youth on the spectrum from 0-22 years old that can be implemented in multiple settings.
- Involves someone correctly performing a target behavior or skill as a visual demonstration for the learner.

WHY USE WITH LEARNERS ON THE SPECTRUM?

- Learners on the spectrum often struggle with acquiring new target skills or behaviors.
- Modeling increases the ability of learners to perform the new skill/behavior and supports the generalization and maintenance of the skill/behavior.
- Modeling is a cost-efficient and convenient teaching tool that requires few additional resources.

TIPS:

- Before using modeling, make sure the learner can imitate others' behaviors and sustain attention long enough to watch the model perform the target skill.
- If possible, select a model who is physically similar to the learner and respected by the learner.
- If using a peer for a model, provide the peer with a script and role play how the peer will perform the skill/behavior.

INSTRUCTIONAL OUTCOMES:

The evidence-base for Modeling supports its use to address the following outcomes, according to age range, in the table below:

Age	Academic	Adaptive	Behavior	Communication	Joint Attention	Motor	Play	School Readiness	Social	Vocational
0-2				Yes		Yes			Yes	
3-5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
6-11	Yes	Yes	Yes	Yes			Yes	Yes	Yes	
12-14	Yes			Yes				Yes	Yes	
15-18	Yes			Yes						
19-22				Yes					Yes	Yes

STEPS FOR IMPLEMENTING:

1. **PLAN**
   - Determine if learner has prerequisite skills needed for modeling
   - Select evidence-based practices to use with modeling to teach target behavior
   - Identify times and activities to use modeling
   - Identify model for the learner
   - Provide training to model if applicable
   - Determine if model will be used as a prime or as a prompt

2. **USE**
   - Follow the unique steps for using selected model procedure
   - Provide feedback to learner using reinforcement and prompting
   - Thin reinforcement

3. **MONITOR**
   - Collect and analyze data on target behaviors
   - Determine next steps based on learner progress

Modeling
MD

This sheet was designed as a supplemental resource to provide basic information about Modeling for professionals working with learners on the spectrum.

For more information about this selected evidence-based practice, please visit https://afirm.fpg.unc.edu/.

Parent's Guide

WHAT IS MD?

- Modeling is a foundational evidence-based practice for children and youth on the spectrum from 0-22 years old.
- Modeling involves a learner observing someone correctly performing a target skill or behavior.

WHY USE THIS MD WITH MY CHILD?

- Learners on the spectrum often struggle with acquiring new target skills or behaviors.
- Observing someone perform the target skill or behavior increases the likelihood the learner will acquire and generalize the skill or behavior.
- Research studies have shown that Modeling has been used effectively with many age groups to achieve outcomes in the following areas: academic, adaptive/self-help, behavior, communication, joint attention, motor, play, school readiness, social, and vocational.

WHAT ACTIVITIES CAN I DO AT HOME?

- Before having your child complete an activity, perform the activity yourself. Use exaggerated motions and verbally describe what you are doing. For example, model asking for something to drink first. Then have your child ask for something to drink.
- Make a list of common activities you would like your child to do on a daily basis (such as brushing teeth, putting on shoes, saying "hello"). Choose three activities from the list to begin modeling for your child.
- When your child performs an activity successfully, be sure to praise your child. It might also be helpful to provide time with a favorite toy or activity when completing an activity.

Modeling
MD

This parent introduction to MD was designed as a supplemental resource to help answer questions about Modeling.

To find out more about how this MD is being used with your child, please talk with:

_____

For more information about this selected evidence-based practice, please visit https://afirm.fpg.unc.edu/.

Additional Resources

WEBSITES:

University of Louisville. (n.d.). Modeling-autism/moderate and severe disabilities. https://louisville.edu/education/abri/primarylevel/modeling/autism_msd#:~:text=With%20%22Modeling%22%2C%20the%20teacher,will%20be%20expected%20to%20do

CEC Standards

INITIAL PRACTICE-BASED STANDARDS FOR EARLY INTERVENTIONISTS/EARLY CHILDHOOD (0-5 YEARS; CEC, 2020)

Standard 6: Using Responsive and Reciprocal Interactions, Interventions, and Instruction

6.3 Engage in ongoing planning and use flexible and embedded instructional and environmental arrangements and appropriate materials to support the use of interactions, interventions, and instruction addressing developmental and academic content domains, which are adapted to meet the needs of each and every child and their family.

6.6 Use responsive interactions, interventions, and instruction with sufficient intensity and types of support across activities, routines, and environments to promote child learning and development and facilitate access, participation, and engagement in natural environments and inclusive settings.

6.7 Plan for, adapt, and improve approaches to interactions, interventions, and instruction based on multiple sources of data across a range of natural environments and inclusive settings.

INITIAL PRACTICE-BASED STANDARDS FOR (GRADES K-12; CEC, 2020):

Standard 5: Supporting Learning Using Effective Instruction

5.1 Use findings from multiple assessments, including student self-assessment, which are responsive to cultural and linguistic diversity and specialized as needed, to identify what students know and are able to do. They then interpret the assessment data to appropriately plan and guide instruction to meet rigorous academic and non-academic content and goals for each individual.

5.2 Use effective strategies to promote active student engagement, increase student motivation, increase opportunities to respond, and enhance self-regulation of student learning.

5.3 Use explicit, systematic instruction to teach content, strategies, and skills to make clear what a learner needs to do or think about while learning.

5.6 Plan and deliver specialized, individualized instruction that is used to meet the learning needs of each individual.

ADVANCED PRACTICE-BASED STANDARDS (CEC, 2012):

Standard 3: Programs, Services, and Outcomes

3.1 Design and implement evaluation activities to improve programs, supports, and services for individuals with exceptionalities.

3.2 Use understanding of cultural, social, and economic diversity and individual learner differences to inform the development and improvement of programs, supports, and services for individuals with exceptionalities.

3.3 Apply knowledge of theories, evidence-based practices, and relevant laws to advocate for programs, supports, and services for individuals with exceptionalities.

GLOSSARY

Baseline - information gathered from multiple sources to better understand the target behavior, before using an intervention or practice.

Baseline data - data collected on current performance level prior to implementation of intervention.

Controlling prompt - ensures the learner performs the target skill/behavior correctly.

Cue - signals the learner to perform the skill.

Discrete task - a task that requires a single response and is of a relatively short duration.

Duration data - records how long a learner engages in a particular behavior or skill.

Event sampling - collects frequency data at every instance the behavior occurs.

Frequency data - used to measure how often the learner on the spectrum engages in the target skill or behavior.

Generalization - when the target skill or behavior continues to occur when the intervention ends, in multiple settings, and with multiple individuals (e.g., peers, teachers, parents).

In vivo - modeling, role-play, use of strategies and skills in real situations can be helpful in developing, reinforcing, and generalization of skills.

Individualized Intervention - an intervention that is planned and implemented in a way specific to the learner receiving the intervention.

Modeling - involves the learner observing someone correctly performing a target behavior.

Peer - classmate of learner on the spectrum.

Positive reinforcement - refers to the presentation of a reinforcer after a learner uses a target skill/behavior, therefore encouraging him/her to perform that behavior again.

Prompt - any help provided that will assist the learner in using specific skills. Prompts can be verbal, gestural, or physical.

Reinforcement - feedback that increases the use of a strategy or target behavior/skill.

Reinforcer sampling - helps to identify activities and materials that are motivating to learner with autism. Also known as a preference assessment.

Reinforcers - increase the likelihood that the target skill/behavior will be used again in the future.

Response interval - the amount of time the learner has to respond.

Script - Provide prompts for use of a strategy or target behavior/skill.

Target behavior - the behavior or skill that is the focus of the intervention. Behavior may need to be increased or decreased.

Team members - includes the parents, other primary caregivers, IEP/IFSP team members, teachers, therapists, early intervention providers, and other professionals involved in providing services for the learner on the spectrum.

References

1. McDowell, L. S., Gutierrez Jr, A., & Bennett, K. D. (2015). Analysis of live modeling plus prompting and video modeling for teaching imitation to children with autism. *Behavioral Interventions, 30*(4), 333-351. doi: 10.1002/bin.1419

2. Landa, R. J., Holman, K. C., O'Neill, A. H., & Stuart, E. A. (2011). Intervention targeting development of socially synchronous engagement in toddlers with autism spectrum disorder: A randomized controlled trail. *Journal of Child Psychology and Psychiatry, 52*(1), 13-31. doi: 10.1111/j.1469-7610.2010.02288.x

3. Schrandt, J. A., Townsend, D. B., & Poulson, C. L. (2009). Teaching empathy skills to children with autism. *Journal of Applied Behavior Analysis, 42*(1), 17-32. doi: 10.1901/jaba.2009.42-17

4. Charlop-Christy, M. H., Le, L., & Freeman, K. A. (2000). A comparison of video modeling with in vivo modeling for teaching children with autism. *Journal of Autism and Developmental Disorders, 30*(6), 537-552. doi: 10.1023/A:1005635326276

5. Matson, J. L., Box, M. L., & Francis, K. L. (1992). Treatment of elective mute behavior in two developmentally delayed children using modeling and contingency management. *Journal of Behavior Therapy and Experimental Psychiatry, 23*(3), 221-229. doi: 10.1016/0005-7916(92)90039-L

6. Ribsby-Eldredge, M., & McLaughlin, T. F. (1992). The effects of modeling and praise on self-initiated behavior across settings with two adolescent students with autism. *Journal of Developmental and Physical Disabilities, 4*(3), 205-218. doi: 10.1007/BF01046965

7. Steinbrenner, J. R., Hume, K., Odom, S. L., Morin, K. L., Nowell, S. W., Tomaszewski, B., Szendrey, S., McIntyre, N. S., Yücesoy-Özkan, S., & Savage, M. N. (2020). *Evidence-based practices for children, youth, and young adults with Autism.* The University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Institute, National Clearinghouse on Autism Evidence and Practice Review Team. https://ncaep.fpg.unc.edu/sites/ncaep.fpg.unc.edu/files/imce/documents/EBP%20Report%202020.pdf

8. Cooper, J.O., Heron, T.E., & Heward, W.L. (2007). *Applied behavior analysis, 2nd ed.* New Jersey: Prentice Hall

9. Alberto, P. A., & Troutman, A. C. (2012). *Applied behavior analysis for teachers, 9th ed.* Upper Saddle River, NJ: Prentice Hall.