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Autism Focused Intervention Resources & Modules

TA EBP BRIEF PACKET: TASK ANALYSIS

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





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OVERVIEW OF CONTENT

- **1. Table of TA Contents:** This list details the specific TA resources that apply to Task Analysis.
- 2. What is TA: A quick summary of salient features of Task Analysis, 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 Task Analysis.
- **4. Planning Checklist:** This checklist details the steps for planning for Task Analysis, including what prerequisite learning of practices are needed, collecting baseline data of the target goal/behavior/skill 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 Task Analysis.
- **6. Step-by-Step Guide:** Use this guide as an outline for how to plan for, use, and monitor Task Analysis. Each step includes a brief description as a helpful reminder while learning the process.
- 7. **Implementation Checklist:** Use this checklist to determine if Task Analysis 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 target goal/behavior/skill.
- **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 Task Analysis.
- **10. Parent Guide:** Use this guide intended for parents or family members of learners on the spectrum to help them understand basic information about Task Analysis and how it is being used with their child.
- **11. Additional Resources:** This list provides additional information for learning more about Task Analysis as well as resources.
- **12. CEC Standards:** This list details the specific CEC standards that apply to Task Analysis.
- 13. Glossary: This glossary contains key terms that apply specifically to Task Analysis.
- **14. References:** This list details the specific references used for developing this TA module in numerical order.







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TASK ANALYSIS

WHAT IS TA?

Task analysis can be used to break down complex skills or behaviors into smaller, discrete steps. Once the skill is broken into steps, adults can help learners master the individual steps and then chain the smaller steps together to acquire the target skill or behavior. Chained behaviors are behaviors or skills which consist of multiple steps such as tying shoes, grocery shopping, writing a paper, or cooking. Once chained behaviors are broken into smaller steps, team members work with the learner to systematically teach the individual steps. As the learner masters the individual steps, the learner will gradually become more independent using the target skill or behavior.

EVIDENCE-BASE:

Based upon the 2020 systematic review conducted by the National Clearinghouse on Autism Evidence and Practice (NCAEP), Task Analysis is a focused intervention that meets evidencebased practice criteria with 13 single case design studies. Task Analysis has been effective for 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 in the 2020 EBP report (Steinbrenner et al., 2020) detail how Task Analysis can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, communication, joint attention, motor, play, social, and vocational.

HOW IS TA BEING USED?

Task Analysis 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 Task Analysis in the home.

SUGGESTED CITATION:

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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), Task Analysis is a focused intervention that meets evidencebased practice criteria with 13 single case design studies. Task Analysis has been effective for 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 in the 2020 EBP report (Steinbrenner et al., 2020) detail how Task Analysis can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, communication, joint attention, motor, play, social, and vocational.

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

Age	Academic	Adaptive	Comm- unication	Joint Attention	Motor	Play	Social	Vocational
3-5		Yes	Yes	Yes				
6-11	Yes	Yes	Yes		Yes		Yes	
12- 14	Yes		Yes	Yes		Yes		Yes
15- 18								Yes
19- 22								Yes







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PRESCHOOL (3-5 YEARS):

- Martins, M. P., & Harris, S. L. (2006). Teaching children with autism to respond to joint attention initiations. *Child & Family Behavior Therapy*, *28*(1), 51-68. https://doi.org/10.1300/J019v28n01_04
- *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
- *Tarbox, J., Madrid, W., Aguilar, B., Jacobo, W., & Schiff, A. (2009). Use of chaining to increase complexity of echoics in children with autism. *Journal of Applied Behavior Analysis, 42*(4), 901. https://doi.org/10.1901/jaba.2009.42-901

ELEMENTARY SCHOOL (6-11 YEARS):

- *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
- Morse, T. E., & Schuster, J. W. (2000). Teaching elementary students with moderate intellectual disabilities how to shop for groceries. *Exceptional Children*, *66*(2), 273-288. https://doi.org/10.1177/001440290006600210
- Parker, D., & Kamps, D. (2011). Effects of task analysis and self-monitoring for children with autism in multiple social settings. *Focus on Autism and Other Developmental Disabilities*, *26*(3), 131-142. https://doi.org/10.1177/1088357610376945
- Spooner, F., Kemp-Inman, A., Ahlgrim-Delzell, L., Wood, L., & Davis, L. L. (2015). Generalization of literacy skills through portable technology for students with severe disabilities. *Research and Practice for Persons with Severe Disabilities, 40*(1), 52-70. https://doi.org/10.1177/1540796915586190
- *Tarbox, J., Madrid, W., Aguilar, B., Jacobo, W., & Schiff, A. (2009). Use of chaining to increase complexity of echoics in children with autism. *Journal of Applied Behavior Analysis*, *42*(4), 901. https://doi.org/10.1901/jaba.2009.42-901
- Tekin-Iftar, E., & Birkan, B. (2010). Small group instruction for students with autism: General case training and observational learning. *The Journal of Special Education*, *44*(1), 50-63. https://doi.org/10.1177/0022466908325219
- Yılmaz, İ., Birkan, B., Konukman, F., & Erkan, M. (2005). Using a constant time delay procedure to teach aquatic play skills to children with autism. *Education and Training in Developmental Disabilities*, *40*(2), 171-182.
- Yılmaz, İ., Konukman, F., Birkan, B., Ozen, A., Yanardağ, M., & Camursoy, I. (2010). Effects of constant time delay procedure on the Halliwick's method of swimming rotation skills for children with autism. *Education and Training in Autism and Developmental Disabilities*, *45*(1), 124-135.

MIDDLE SCHOOL (12-14 YEARS):

- *Bennett, K. D., Ramasamy, R., & Honsberger, T. (2013). The effects of covert audio coaching on teaching clerical skills to adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 43*(3), 585-93. https://doi.org/10.1007/s10803-012-1597-6
- Browder, D. M., Trela, K., & Jimenez, B. (2007). Training teachers to follow a task analysis to engage middle school students with moderate and severe developmental disabilities in grade-appropriate literature. *Focus on Autism and Other Developmental Disabilities*, 22(4), 206-219. <u>https://doi.org/10.1177/10883576070220040301</u>

Lambert, J. M., Copeland, B. A., Karp, E. L., Finley, C. I., Houchins-Juarez, N. J., & Ledford, J. R. (2016). Chaining functional basketball sequences (with embedded conditional discriminations) in an adolescent with autism. *Behavior Analysis in Practice, 9*(3), 199-210. https://doi.org/10.1007/s40617-016-0125-0









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HIGH SCHOOL (15-18 YEARS):

*Bennett, K. D., Ramasamy, R., & Honsberger, T. (2013). The effects of covert audio coaching on teaching clerical skills to adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 43*(3), 585-93. https://doi.org/10.1007/s10803-012-1597-6

*Cihak, D. F., Wright, R., Smith, C. C., McMahon, D., & Kraiss, K. (2015). Incorporating functional digital literacy skills as part of the curriculum for high school students with intellectual disability. *Education and Training in Autism and Developmental Disabilities, 50*(2), 155-171.

YOUNG ADULT (19-22 YEARS):

*Bennett, K. D., Ramasamy, R., & Honsberger, T. (2013). The effects of covert audio coaching on teaching clerical skills to adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 43*(3), 585-93. https://doi.org/10.1007/s10803-012-1597-6

*Cihak, D. F., Wright, R., Smith, C. C., McMahon, D., & Kraiss, K. (2015). Incorporating functional digital literacy skills as part of the curriculum for high school students with intellectual disability. *Education and Training in Autism and Developmental Disabilities, 50*(2), 155-171.

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









TASK ANALYSIS PROCEDURES

FORWARD CHAINING:

The first step in a chain is taught first. As each step is mastered, the next step is taught. When teaching a learner to wash hands, the step of turning on the water would be taught and reinforced before teaching a learner to rub hands together with soap.

- 1. Prompt the learner to perform the first step identified in the task analysis. Use the selected prompting procedure (least-to-most prompting, graduated guidance, or simultaneous prompting). Be sure to use any additional created materials such as a video for video modeling or visual directions that could assist the learner in performing the skill/behavior.
- 2. When learner completes the step, reinforce the learner with social praise and a tangible reinforcer if appropriate.
- 3. After the first step is completed, guide the learner through the remaining steps.
- 4. When the first step is mastered, the next step in the task analysis is added one at a time.

BACKWARD CHAINING:

The final step in a chain is taught first. As each step is mastered, the previous step is taught. When teaching a learner to wash hands, the final step of drying hands with a paper towel would be reinforced before teaching the learner to turn off the water.

- 1. Provide assistance to learner with completing the initial identified steps. For example, if the target skill is washing hands, the adult will assist with the entire handwashing experience until the final step (drying hands).
- 2. Prompt learner to perform the final step. An adult will prompt the learner to then dry hands. Remember, to select the prompting procedure (least-to-most prompting, graduated guidance, or simultaneous prompting) that would best assist the learner in understanding what is expected. Also, be sure to use visual supports if appropriate.
- 3. Reinforce the leaner for completing the final step. Use a social reinforcer such as "Great job drying your hands" with a tangible reinforcer such as a token or time with a favorite toy.
- 4. When the final step is mastered, the previous step is added one at a time. After drying hands is mastered, the learner would then learn the previous step of turning off the water.







TOTAL TASK PRESENTATION:

Learner performs entire chain with reinforcement at each step and the most effective reinforcer at completion of task.

When teaching a learner to wash hands, the learner would be prompted and reinforced at each step with the most effective reinforcer provided at the final step.

- Use a prompting procedure (least-to-most prompting, graduated guidance, or simultaneous prompting) and visual supports or video modeling to assist the learner in performing each step of the task analysis. For example, if a learner's target skill is putting on a coat, visual directions of each step of the process along with physical prompts from the teacher might be used to help the learner perform the chain of behaviors.
- 2. Reinforce the learner for completing each step. Be sure to save the most effective reinforcer for the final step when the entire skill/behavior has been performed. For example, try providing social reinforcement for each individual step, but then provide a tangible reinforcer such as time with the computer or a favorite toy. Sometimes, natural reinforcers can be used. If going outside is a preferred activity, going outside might be a natural reinforcer for putting on a coat.
- 3. Fade reinforcers as quickly as possible. As the learner becomes more skilled, begin to fade reinforcers. See the reinforcement module, for more information on fading reinforcers.

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ADAPTATIONS WORKSHEET

Learner's Name: ____

Date/Time:

Observer(s):

Target Goal/Behavior/Skill:

Directions: Use this worksheet to identify instructional adaptations for the learner.

CONDUCT A TASK ANALYSIS ASSESSMENT:

- 1. Complete an inventory of a typically developing peer completing the skill, task, or activity. As you observe a peer completing the task or activity, write down each step. For more detailed information on this process, check out the Task Analysis module.
- 2. Observe the learner completing the skill, task, or activity. Record behaviors/steps that are performed independently and those that are not performed independently.
- 3. Identify behaviors that the learner on the spectrum cannot be expected to perform independently.
- 4. Create a list of potential adaptations that would allow the learner on the spectrum to participate in the activity. This step will help identify specific instructional modifications that can help the learner participate in a specific activity and reduce interfering behavior.

IDENTIFY BEHAVIORS/STEPS AND ADAPTATIONS:

Step	Independent	Notes	Adaptations
1.	Yes No		
2.	Yes No		
3.	Yes No		
4.	Yes No		
5.	Yes No		
6.	Yes No		







Task Analysis For more information, please visit: https://afirm.fpg.unc.edu/

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FIRST/THEN BOARD

Learner's Name: _____

Date/Time: _____

Observer(s):

Target Goal/Behavior/Skill:

Directions: Use this template to create a first/then visual schedule.

First	Then









TASK ANALYSIS WORKSHEET

Learner's Name:_____

Date/Time: _____

Observer(s):

Target Goal/Behavior/Skill: __

Directions: Use this template to create a task analysis for the learner. Add clipart, icons, pictures, or concrete objects.

1.				
2.				
3.				
4.				
5.				
6.				
7.				
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PLANNING CHECKLIST

Learner's Name: ___

Date/Time:

Observer(s): ______ Target Goal/Behavior/Skill:

Directions: Complete this checklist to determine if this is an appropriate practice to use with the learner on the spectrum as well as if TA is ready to be implemented.

TARGET GOAL/BEHAVIOR/SKILL:

Define the target goal/behavior/skill:

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?

DETERMINE IF APPROPRIATE:

□ Is this selected practice appropriate for the learner's target goal/behavior/skill?

Does the learner have needed prerequisite skills/abilities?

Does the learner require additional adaptations/ modifications/supports? Such as visual supports or 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 this selected practice ready and available?









SELECT PROCEDURE:

Forward Chaining

Backward Chaining

Total Task Presentation

SELECT ADDITIONAL EBPS:

	Modeling
_	

Prompting

Reinforcement

Social Narratives

Uideo Modeling

U Visual Supports

Other: _____

TA SPECIFIC PLANNING:

Have components of the target skill/behavior been identified?

Have the identified components of the target skill/behavior been analyzed?

Has a task analysis procedure been selected?

Have additional EBPs been selected?

Have task analysis materials been created?









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.

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.

ltem 1	Selected?	ltem 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:









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LIST POTENTIAL REINFORCERS:

1.	What natural reinforcers could be used?	AGE APPR	OPRIATE?
		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

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Task Analysis For more information, please visit: <u>https://afirm.fpg.unc.edu/</u>

TA

FOODS FOR SNACKS/MEALTIME ROUTINES:

	Cheese		Fruit		Pretzels			
	Chicken Nuggets		Goldfish		Other:			
	Chips		Ice Cream		Other:			
	French Fries		Pizza		Other:			
GA	GAMES FOR PLAY/RECESS ROUTINES:							
	Burrito games with a		Peek-a-Boo		Other:			
_	Dianket		Tickles		Other:			
	Chase		Other:		Other:			
	Pat-a-Cake							
то	YS FOR PLAY/RECESS R	OU	TINES:					
	Books		Legos		Remote controlled toys			
	Cars/Trains/Trucks		Noisy toys		Other:			
	Computer		Phones		Other:			
	Doll house		Puzzles		Other:			
SP	ECIAL INTERESTS FOR A		VITIES/ROUTINES:					
	Book Character:		Movie Character:		TV Show:			
	Book:		Movie:		Video Game:			
	Cars, Trains, Trucks		Music		Other:			
	Computers/Technology		Numbers		Other:			
	Dinosaurs		Real-Life Person:		Other:			
	Letters		TV Show Character:		Other:			









PROMPTING HIERARCHY

Learner's Name: ____

Date/Time:

Observer(s):

Target Goal/Behavior/Skill:

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		

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DECISION TREE: GRADUATED GUIDANCE

Learner's Name: _

Date/Time:

Observer(s):

Target Goal/Behavior/Skill:

Directions: Use this decision tree for using this prompting procedure to use with the learner on the spectrum during forward chaining or total task presentation task analysis.

GRADUATED GUIDANCE PROCEDURE:

Teachers and practitioners provide a controlling prompt which ensures the learner will do the skill correctly and then gradually remove the prompt during a teaching activity. Decisions are made during the teaching activity based upon the learner's response.

Controlling Prompt:

Determine the response interval:

If the learner *does not respond* after a short response interval:

- Provide the amount and type of prompt needed to get the learner to begin performing the chained task
- When the learner begins performing the chained task, reduce the intensity or amount of the prompt and start to shadow the learner's movements

If the learner *stops* performing the chained task:

- Immediately provide the amount and type of prompts needed to have the learner perform the chained task correctly
- If the learner begins using the target skill incorrectly:
 - Immediately block that movement and provide the amount and type of prompts needed to have the learner perform the chained task correctly

If the learner *resists* physical prompts:

- Stop moving and hold the learner's hands in place
- When resistance subsides, start the movement toward completing the chained task again by applying the amount and type of prompt needed to have the learner perform the chained task correctly.

As the learner completes each step of the chained task correctly:

Provide verbal praise and encouragement

At the end of the chained task, if the learner *completes the chained task correctly*:

Provide reinforcement to the learner

If resistance occurs at the end of the chained task

- Do not provide reinforcement
- Stop teaching the target skill/behavior until the learner is no longer resistant
- Begin teaching the target skill/behavior from the beginning of the chain







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DECISION TREE: LEAST-TO-MOST PROMPTING

Learner's Name: _

Date/Time:

Observer(s):

Target Goal/Behavior/Skill:

Directions: Use this decision tree for using this prompting procedure to use with the learner on the spectrum during forward chaining or total task presentation task analysis.

LEAST-TO-MOST PROMPTING PROCEDURE:

A prompt hierarchy with at least three levels used to teach new skills. At the first level, the learner is given the opportunity to respond without prompts. The remaining levels include prompts that proceed from least-to-most amounts of assistance needed. The last level is the controlling prompt, which is a prompt that ensures the learner will respond correctly.

Level	Prompt	Instructions (Target stimulus & Cue or Task Directions)
Level 1 (Least)	Independent	
Level 2		
Level 3 (Controlling Prompt)		

If the learner's response is *correct*:

- Offer reinforcement (praise, access to materials, break) and
- State what the learner did

If the learner's response is incorrect:

- Interrupt the incorrect response, then
- Deliver the next prompt in the hierarchy, and
- Continue through the prompting hierarchy until a correct response occurs, and then
- Deliver reinforcement

If the learner does not respond:

- Use the prompt in the next level of the prompt hierarchy, and
- Continue through the prompting hierarchy until a correct response occurs, and then
- Deliver reinforcement









DECISION TREE: SIMULTANEOUS PROMPTING

Learner's Name: _

Date/Time: _

Observer(s):

Target Goal/Behavior/Skill:

Directions: Use this decision tree for using this prompting procedure to use with the learner on the spectrum during forward chaining or total task presentation task analysis.

SIMULTANEOUS PROMPTING PROCEDURE:

In the instructional session, the task direction or cue (signal to use target skill) and controlling prompt (prompt that ensures the learner will perform the target skill successfully) are delivered simultaneously. In the probe sessions, the cue or task direction is delivered without the prompts to monitor the learner's progress.





MONITORING PROGRESS CHECKLIST

Learner's Name: ____

Date/Time:

Observer(s): _

Target Goal/Behavior/Skill:

Directions: Complete this checklist to determine if the learner is making progress to the target goal/behavior/skill with Task Analysis.

MONITORING PROGRESS:

Has data been collected to determine if the learner is making progress?

Has the learner achieved the target goal/behavior/skill?

□ 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 the target goal/behavior/skill too difficult/complex? Does it need to be broken down into smaller steps?

Has enough time been devoted to using Task Analysis (frequency, intensity, and/or duration)?

Uwas Task Analysis implemented with fidelity?

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

Are the selected reinforcers preferred items/activities for the learner?









COLLECT DATA:

Collect data on target behaviors. Be sure to include the level of support needed for each of the steps identified in the task analysis.

	Dates				
Steps					

Prompt Key: VB = Verbal; VSP = Prompt to use Visual Support; G = Gestural; M = Model; P = Physical; I = No prompts needed/Independent; IS = Independent with support (VS = Visual Support; VM = Video Modeling; SN = Social Narratives)

ANECDOTAL NOTES:









STEP-BY-STEP GUIDE

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

BEFORE YOU BEGIN...

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

HAVE YOU FOUND OUT MORE INFORMATION ABOUT ...?

- □ 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).

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



Keep in mind that **Task Analysis** can be used to used to increase completion of target skills/behaviors.

STEP 1: PLANNING FOR TA

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

1.1 Determine if learner has prerequisite skills needed to learn target skill/behavior Review collected data to determine if the learner has the perquisite skills needed for the target skill or behavior. If the learner does not have the prerequisite skills, these skills will either need to be incorporated into the steps of the task analysis or taught before proceeding with the task analysis.







1.2 Identify the components of the target skill/behavior

Break down a target skill or behavior into smaller steps by:

- Watching someone competent in completing the target skill/behavior complete the task. As the person completes the task, write down each step.
- Asking an expert in the target skill or behavior to record each of the steps.
- Completing the task yourself and record each of the steps.

1.3 Check if task is completely analyzed

Check to determine if the steps are accurate by performing the target skill or behavior again and following each of the steps. Make sure:

- Each step is a discrete behavior,
- The steps are manageable for the learner, and
- The steps are described accurately for the learner's needs.

1.4 Select appropriate task analysis procedure

Team members will decide what procedure they will use for chaining the identified steps: forward chaining, backward chaining, or total task.

1.5 Select appropriate method for teaching steps of the TA

To teach the determined individual steps, team members will need to select additional evidence-based practices. Prompting, time delay, and reinforcement are commonly used practices to teach the smaller steps.

1.6 Develop presentation materials of the steps

Consider the strengths and needs of the learner on the spectrum to determine how the steps of the task analysis should be presented to the learner. The steps of the task analysis can be presented with pictures, text, or video.

STEP 2: USING TA

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

2.1 Follow the unique steps for backward chaining.

When backward chaining is used to teach a target skill or behavior, the steps identified in the task analysis will be taught in reverse order beginning with the final step. Follow the steps outlined below:

- Provide assistance to learner with completing the initial identified steps.
- Prompt learner to perform the final step. Remember, to select the prompting procedure (least-to-most prompting, graduated guidance, or simultaneous prompting) that would best assist the learner in understanding what is expected. Also, be sure to use visual supports if appropriate.
- Reinforce the leaner for completing the final step.
- When the final step is mastered, the previous step is added one at a time. The GRADUATE GUIDANCE DECISION TREE, LEAST-TO-MOST DECISION TREE, or the SIMULTANEOUS PROMPTING DECISION TREE to guide your response to learners' attempts.







2.2 Follow the unique steps for forward chaining

When forward chaining is used, an adult begins by teaching the first step in the chain. As each step is mastered, the next step in the task analysis is then taught. Follow the steps outlined below:

- Prompt the learner to perform the first step identified in the task analysis. Use the selected prompting procedure (least-to-most prompting, graduated guidance, or simultaneous prompting). Be sure to use any additional created materials such as a video for video modeling or visual directions that could assist the learner in performing the skill/behavior.
- When learner completes the step, reinforce the learner with social praise and a tangible reinforcer if appropriate.
- After the first step is completed, guide the learner through the remaining steps.
- When the first step is mastered, the next step in the task analysis is added one at a time.

2.3 Follow the unique steps for total task presentation

For total task presentation, the learner is taught the entire task including each individual step until the chain is mastered. Follow the steps outlined below:

- Use a prompting procedure (least-to-most prompting, graduated guidance, or simultaneous prompting) and visual supports or video modeling to assist the learner in performing each step of the task analysis.
- Reinforce the learner for completing each step. Be sure to save the most effective reinforcer for the final step when the entire skill/behavior has been performed.
- Fade reinforcers as quickly as possible.

STEP 3: MONITORING TA

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

3.1 Collect and analyze data

It is important to continuously collect and review data with the TA team. Collect data on:

- setting of observation
- sensory experiences available in the setting by modality
- learner's response to sensory stimuli
- level of prompting needed for learner to participate in that sensory setting
- other TAs or strategies used to support the learner
 The MONITORING PROGRESS CHECKLIST can be used to monitor learner progress towards TA goals.







3.2 Determine next steps based on learner progress

Collecting data will help team members decide about the effectiveness of using Task Analysis 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 TA 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 Task Analysis (frequency, intensity, and/or duration)?
- Is the target goal/behavior/skill being targeted during appropriate routines and activities?
- Is TA appropriate or a 'good fit' for the target behavior?
- Are TA 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.









TA

IMPLEMENTATION CHECKLIST: FORWARD CHAINING

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	Determine if learner has prerequisite skills needed to learn target skill/behavior					
1.2	Identify the components of the target skill/behavior					
1.3	Check if task is completely analyzed					
1.4	Select appropriate task analysis procedure					
1.5	Select appropriate method for teaching steps of task analysis					
1.6	Develop presentation materials of the steps					
STEP 2: USING						
2.1	Prompt learner to perform first identified step					
2.2	Reinforce learner for completing step					
2.3	Guide learner through remaining steps					
2.4	When first step is mastered, the next step is added one at a time					
	STEP 3: MONITORING					
3.1	Collect and analyze data					
3.2	Determine next steps based on learner progress					







is TA

IMPLEMENTATION CHECKLIST: BACKWARD CHAINING

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	Determine if learner has prerequisite skills needed to learn target skill/behavior						
1.2	Identify the components of the target skill/behavior						
1.3	Check if task is completely analyzed						
1.4	Select appropriate task analysis procedure						
1.5	Select appropriate method for teaching steps of task analysis						
1.6	Develop presentation materials of the steps						
	STEP 2: USING						
2.1	Provide assistance with initial steps						
2.2	Prompt learner to perform final step						
2.3	Reinforce learner for completing final step						
2.4	When final step mastered, previous step is added one at a time						
	STEP 3: MONITORING						
3.1	Collect and analyze data						
3.2	Determine next steps based on learner progress						







TA

IMPLEMENTATION CHECKLIST: TOTAL TASK PRESENTATION

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	Determine if learner has prerequisite skills needed to learn target skill/behavior					
1.2	Identify the components of the target skill/behavior					
1.3	Check if task is completely analyzed					
1.4	Select appropriate task analysis procedure					
1.5	Select appropriate method for teaching steps of task analysis					
1.6	Develop presentation materials of the steps					
	STEP 2: USING					
2.1	Prompt learner to perform first identified step					
2.2	Reinforce learner for completing step					
2.3	Apply most effective reinforcer at completion of task					
2.4	Fade reinforcers as quickly as possible					
_	STEP 3: MONITORING					
3.1	Collect and analyze data					
3.2	Determine next steps based on learner progress					









TIP SHEET FOR PROFESSIONALS

TASK ANALYSIS ...

- Is a foundational evidence-based practice for children and youth on the spectrum from 3-22 years old that can be implemented in multiple settings.
- Breaks complex target skills or behaviors into smaller steps. Team members then work with a learner to systematically teach the individual steps.

WHY USE WITH LEARNERS ON THE SPECTRUM?

- Complex target skills and behaviors can be difficult for learners on the spectrum to process.
- Task analysis helps learners gradually acquire smaller, more manageable steps of the complex target skill or behavior.
- Task analysis is a cost-effect method which requires minimal resources and can be used in multiple settings

INSTRUCTIONAL OUTCOMES:

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



TΑ

TIPS:

- Determine if the learner has the prerequisite skills needed for the target skill or behavior.
- Complete the task yourself or watch someone competent complete the task to identify the smaller steps or components.
- Select additional EBPs that can be used to teach the identified individual steps of the target skill or behavior.
- Steps based on learner progress.

Age	Academic	Adaptive	Comm- unication	Joint Attention	Motor	Play	Social	Vocational
3-5		Yes	Yes	Yes				
6-11	Yes	Yes	Yes		Yes		Yes	
12- 14	Yes		Yes	Yes		Yes		Yes
15- 18								Yes
19- 22								Yes









STEPS FOR IMPLEMENTING:

1. PLAN

- Determine if learner has prerequisite skills needed to learn target skill/behavior
- Identify the components of the target skill/behavior
- Check if task is completely analyzed ٠
- Select appropriate task analysis procedure
- Select appropriate method for teaching steps of task analysis
- Develop presentation materials of the steps

2. USE

· Follow the unique using steps for forward chaining, backward chaining, or total task presentation

3. MONITOR

- Collect and analyze data.
- Determine next steps based on learner progress.



Task Analysis TA

This sheet was designed as a supplemental resource to provide basic information about Task Analysis 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 TA?

- Task Analysis is a foundational evidence-based practice for children and youth on the spectrum from 3-22 years old.
- Task analysis breaks down a complex behavior (for example: cooking, getting dressed, or writing a paper) into smaller steps for the learners to gradually acquire.

WHY USE THIS TA WITH MY CHILD?

- Learners on the spectrum often struggle with learning new skills or behaviors. Task analysis helps a learner become more independent by teaching each individual step of a target skill or behavior
- Research studies have shown that task analysis has been used effectively with elementary and middle school learners to address the following outcomes: social, motor, adaptive, communication, joint attention, and academic.

WHAT ACTIVITIES CAN I DO AT HOME?

- Break apart difficult activities into smaller steps and work on the smaller steps one at a time with your child. For example: if your child is learning how to brush teeth independently, begin by helping your child learn how to put toothpaste on the toothbrush. Gradually add additional steps, such as turning on water or brushing the bottom row of teeth.
- When your child successfully completes a smaller step of an activity, provide reinforcement by saying, "good job" or providing time with a favorite toy.



ΤA

Task Analysis TA

This parent introduction to TA was designed as a supplemental resource to help answer questions about Task Analysis.

To find out more about how this TA 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

APPS:

lcon	Developer	Name	Available	Pricing
	Joey Costa, Clemson Life	TaskAnaysisLIFE	iTunes	Free
	Bee Visual, LLC	Choiceworks	iTunes	\$24.99
	Good Karma Applications, Inc.	First Then Visual Schedule HD	iTunes	\$14.99

WEBSITES:

Pratt, C. & Steward, L. (2020). Applied behavior analysis: The role of task analysis and chaining. https://www.iidc.indiana.edu/irca/articles/applied-behavior-analysis.html.









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

- 5.2 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.









GLOSSARY

Backward chaining: is a procedure used with task analysis where the final step in a chain is taught first and as a step is mastered, the previous step is taught

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

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

Chained task: a task that requires several individual behaviors to be sequenced together to form a more complex skill

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

Forward chaining: is a procedure used with task analysis. The first step in a chain is taught first. As a step is mastered, the next step is taught

Graduated guidance: teachers and practitioners provide a controlling prompt which ensures the learner will do the skill correctly and then gradually remove the prompt during a teaching activity. As learners begin to use the skill, the prompts are withdrawn, but quickly reinstated if learners regress.

Least-to-most prompting: a prompt hierarchy with at least three levels used to teach new skills. At the first level, the learner is given the opportunity to respond without prompts. The remaining levels include prompts that proceed from least to most amounts of assistance. The last level is the controlling prompt.

Model prompts: involve demonstrating the target skill and are used when verbal or visual prompts are not sufficient in helping learner on the spectrum use the target skill correctly

Natural reinforcer: occur naturally as a result of using the target behavior or skill.

Physical prompts: useful when teaching motor behaviors and when the learner on the spectrum does not respond to less restrictive prompts.

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 on the spectrum. Also known as a preference assessment









Autism Focused Intervention Resources & Modules

TΑ

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

Simultaneous prompting: consists of instructional and probe sessions. In the instructional sessions, the task direction or cue and controlling prompt are delivered simultaneously. In the probe sessions, the cue or task direction is delivered without the controlling prompt to determine if learning is occurring.

Target Goal/Behavior/Skill: is a behavior that interferes with the learner's ability to learn

Task Analysis: breaks down complex target skills or behaviors into smaller steps.

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.

Total task presentation: is a procedure used with task analysis. Learner performs the entire chain with reinforcement at each step and the most effective reinforcer at completion of task

Verbal prompts: includes any verbal assistance provided to learners to help them use a target skill correctly. Verbal cues range in intensity level from least to most restrictive.

Visual instructions: a type of visual support that includes visually organizing an activity or task

Visual prompt: pictorial or object cues that provide learners with information about how to use the target skill or behavior.

Visual Supports: visual supports are concrete cues that are paired with, or used in place of, a verbal cue to provide the learner with information about a routine, activity, behavioral expectation, or skill demonstration.









REFERENCES

- 1. Carter, M., & Kemp, C. R. (1996). Strategies for task analysis in special education, *Educational Psychology*, *16*(2), 155-170, doi: 10.1080/0144341960160205
- 2. Browder, D. M., Trela, K., & Jimenez, B. (2007). Training teachers to follow a task analysis to engage middle school students with moderate and severe developmental disabilities in grade-appropriate literature. *Focus on Autism and Other Developmental Disabilities, 22*(4), 206-219. https://doi.org/10.1177/10883576070220040301
- 3. Spooner, F., Kemp-Inman, A., Ahlgrim-Delzell, L., Wood, L., & Davis, L. L. (2015). Generalization of literacy skills through portable technology for students with severe disabilities. *Research and Practice for Persons with Severe Disabilities, 40*(1), 52-70. https://doi.org/10.1177/1540796915586190
- 4. Morse, T., & Schuster, J. W. (2000). Teaching elementary students with moderate intellectual disabilities how to shop for groceries. *Exceptional Children, 66*(2), 273-288. https://doi.org/10.1177/001440290006600210
- 5. Tekin-Iftar, E., & Birkan, B. (2010). Small group instruction for students with Autism: General case training and observational learning. *Journal of Special Education, 44*(1), 50-53. doi: 10.1177/0022466908325219
- 6. 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
- 7. Tarbox, J., Madrid, W., Aguilar, B., Jacobo, W., & Schiff, A. (2009). Use of chaining to increase complexity of echoics in children with autism. *Journal of Applied Behavior Analysis, 42*(4), 901. https://doi.org/10.1901/jaba.2009.42-901
- 8. Parker, D., & Kamps, D. (2010). Effects of task analysis and self-monitoring for children with autism in multiple social settings. *Focus on Autism and Other Developmental Disabilities, 26* (3), 131-142, doi: 10.1177/1088357610376945
- 9. Martins, M. P., & Harris, S. L. (2006). Teaching children with autism to respond to joint attention initiations. *Child & Family Behavior Therapy, 28*(1), 51-68. https://doi.org/10.1300/J019v28n01_04
- 10. Yilmaz, I., & Birkan, B. (2005). Using a constant time delay procedure to teach aquatic play skills to children with autism. *Education and Training in Developmental Disabilities*, *40*(2), 171-182.
- 11. Yilmaz, I., Konukman, F., Birkan, B., Ozen, A., Yanardag, M., & Camursoy, I. (2010). Effects of constant time delay procedure on the Halliwick's method of swimming rotation skills for children with autism. *Education and Training in Autism and Developmental Disabilities*, *45*(1), 124-135.
- 12. Lambert, J. M., Copeland, B. A., Karp, E. L., Finley, C. I., Houchins-Juarez, N. J., & Ledford, J. R. (2016). Chaining functional basketball sequences (with embedded conditional discriminations) in an adolescent with autism. *Behavior Analysis in Practice*, *9*(3), 199-210. https://doi.org/10.1007/s40617-016-0125-0
- 13. Bennett, K. D., Ramasamy, R., & Honsberger, T. (2013). The effects of covert audio coaching on teaching clerical skills to adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *43*(3), 585-93. https://doi.org/10.1007/s10803-012-1597-6
- 14. Cihak, D. F., Wright, R., Smith, C. C., McMahon, D., & Kraiss, K. (2015). Incorporating functional digital literacy skills as part of the curriculum for high school students with intellectual disability. *Education and Training in Autism and Developmental Disabilities*, *50*(2), 155-171.
- 15. 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. http://autismpdc.fpg.unc.edu/sites/autismpdc.fpg.unc.edu/files/imce/documents/2014-EBP-Report.pdf
- Pratt, C. (2015). Applied behavior analysis: The role of task analysis and chaining. Indiana Resource Center for Autism. http://www.iidc.indiana.edu/pages/AppliedBehavior-Analysis



