Evidence Based Practice Training:

Discrete Trial Training (DTT)

Adapted from Sam, A., & AFIRM Team. (2015). Discrete Trial Training Chapel Hill, NC: National Professional Development Center on Autism Spectrum Disorder, FPG Child Development Center, University of North Carolina. Retrieved from https://afirm.fpg.unc.edu/discrete-trial-training

What is CAPTAIN

The California Autism Professional Training And Information Network (CAPTAIN) is an interagency network developed to support the understanding and use of evidence based practices (EBPs) for individuals with Autism across the state of California

What is CAPTAIN

Marin County SELPA in partnership with CAPTAIN, are members of the Statewide System of Support as the Special Education Content Lead for Autism

This project is funded by the California Department of Education and the California Collaborative for Educational Excellence.

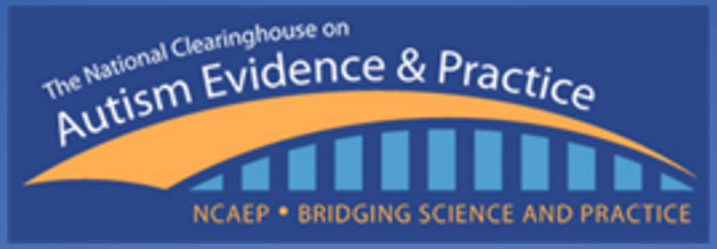
Levels of Professional Development to Reach Implementation

This is a Workshop/Training and is designed to increase your KNOWLEDGE of the topic. Implementation supports to assist you with use of this EBP will be outlined following the TRAINING/WORKSHOP

Before We Begin…

Please complete the **Pre-Training Survey** sent to your email

What are Evidence Based Practices?



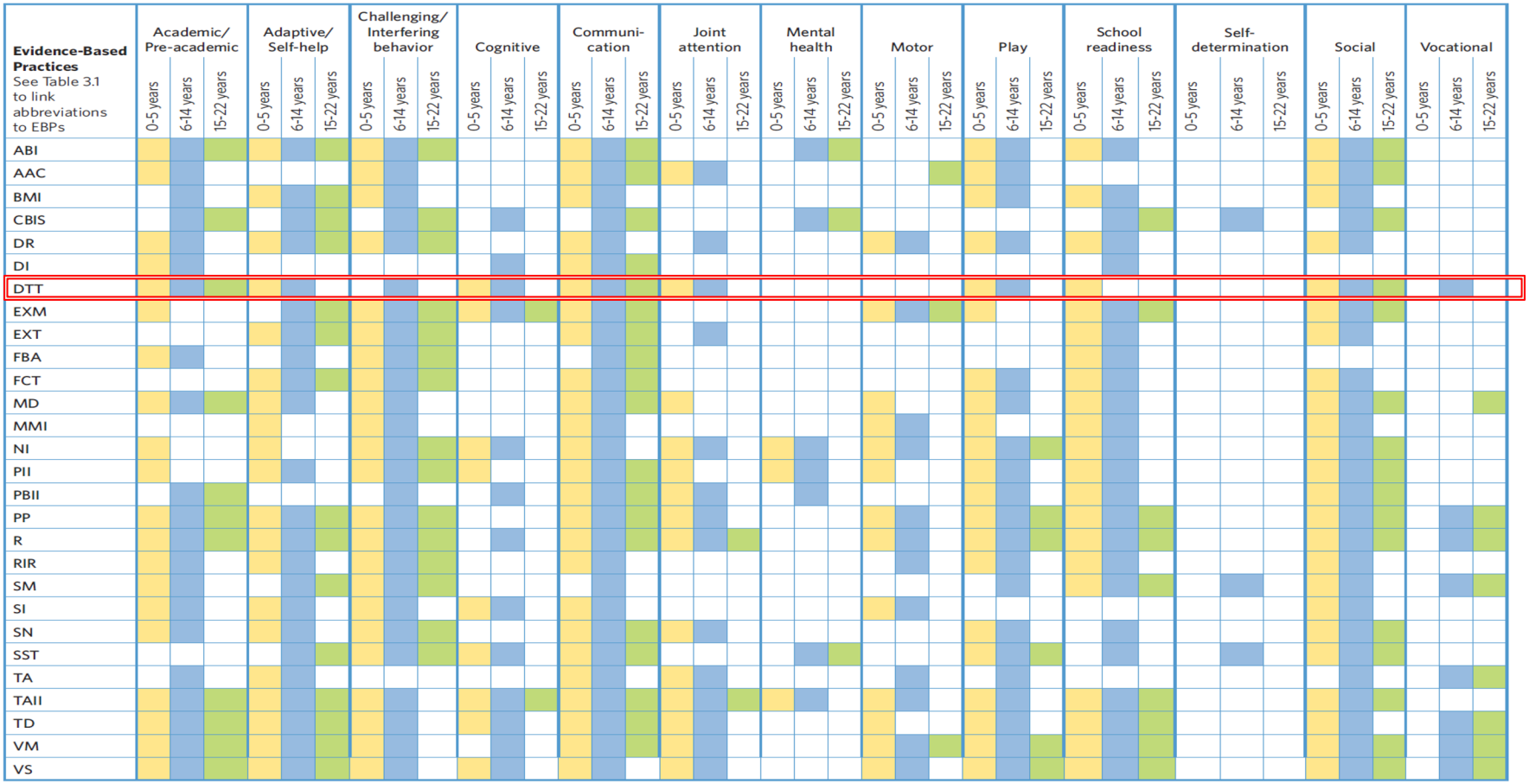
NCAEP definition of an EBP:

"Focused intervention practices that have evidence of efficacy in promoting positive outcomes for learners with ASD."

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.

Evidence Based Practice Matrix (28 EBPs)

Table 3.7 Matrix of evidence-based practices, outcomes, and age categories



Evidence-Based Practices (See Table 3.1 to link abbreviations to EBPs)	Academic/ Pre-academic			Adaptive/ Self-help			Challenging/ Interfering behavior			Cognitive			Communi-cation			Joint attention			Mental health			Motor			Play			School readiness			Self-determination			Social			Vocational		
	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years	0-5 years	6-14 years	15-22 years
ABI																																						
AAC																																						
BMI																																						
CBIS																																						
DR																																						
DI																																						
DTT																																						
EXM																																						
EXT																																						
FBA																																						
FCT																																						
MD																																						
MMI																																						
NI																																						
PII																																						
PBII																																						
PP																																						
R																																						
RIR																																						
SM																																						
SI																																						
SN																																						
SST																																						
TA																																						
TAII																																						
TD																																						
VM																																						
VS																																						

AVAILABLE ON CAPTAIN WEBSITE

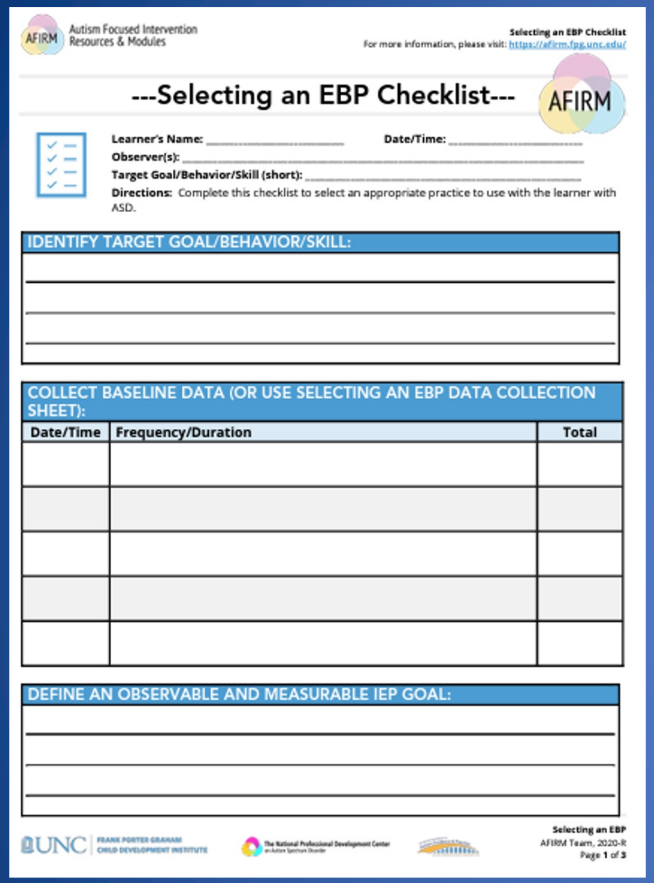
www.captain.ca.gov

Selecting EBPs

Before beginning a new practice with a learner, it is important to follow four planning steps

1. Identify the behavior
2. Collect baseline data on the behavior
3. Establish an observable and measurable goal
4. Choose an EBP
   - Consider the child and family characteristics
   - Consider the teacher and team characteristics
   - Consider other available resources

Selecting an EBP Checklist



Autism Focused Intervention Resources & Modules

Selecting an EBP Checklist
For more information, please visit: https://afirm.fpg.unc.edu/

---Selecting an EBP Checklist---

Learner's Name: _____ Date/Time: _____
Observer(s): _____
Target Goal/Behavior/Skill (short): _____
Directions: Complete this checklist to select an appropriate practice to use with the learner with ASD.

IDENTIFY TARGET GOAL/BEHAVIOR/SKILL:

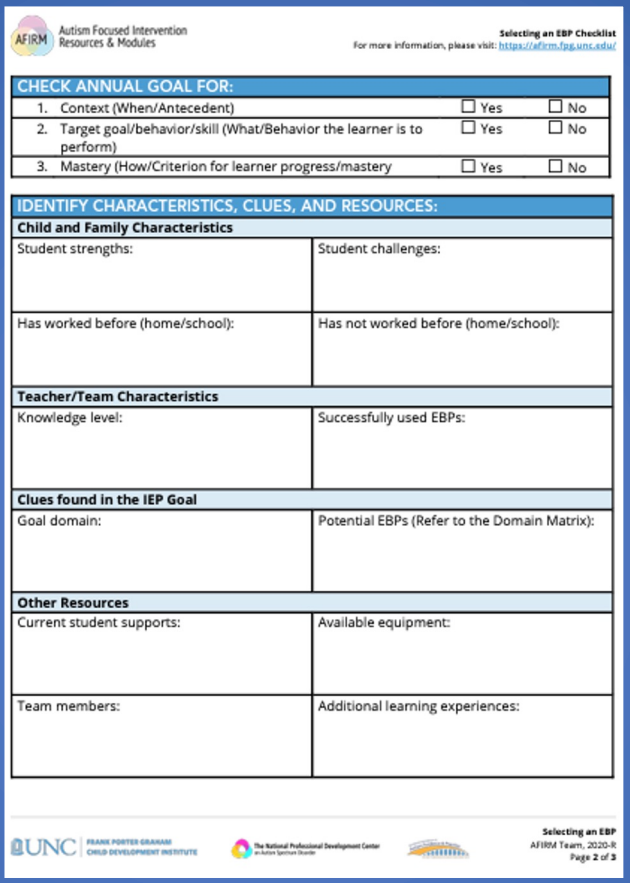
COLLECT BASELINE DATA (OR USE SELECTING AN EBP DATA COLLECTION SHEET):

Date/Time	Frequency/Duration	Total

DEFINE AN OBSERVABLE AND MEASURABLE IEP GOAL:

UNC FRANK PORTER GRAHAM CHILD DEVELOPMENT INSTITUTE | The National Professional Development Center on Autism Spectrum Disorder

Selecting an EBP
AFIRM Team, 2020-R
Page 1 of 3



Autism Focused Intervention Resources & Modules

Selecting an EBP Checklist
For more information, please visit: https://afirm.fpg.unc.edu/

CHECK ANNUAL GOAL FOR:

1. Context (When/Antecedent)	☐ Yes	☐ No
2. Target goal/behavior/skill (What/Behavior the learner is to perform)	☐ Yes	☐ No
3. Mastery (How/Criterion for learner progress/mastery	☐ Yes	☐ No

IDENTIFY CHARACTERISTICS, CLUES, AND RESOURCES:

Child and Family Characteristics

Student strengths:	Student challenges:
Has worked before (home/school):	Has not worked before (home/school):

Teacher/Team Characteristics

Knowledge level:	Successfully used EBPs:

Clues found in the IEP Goal

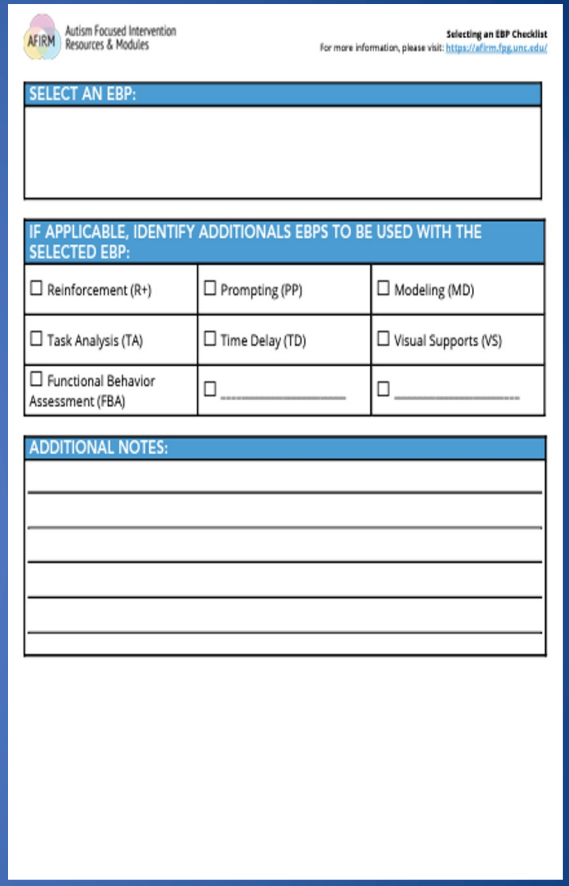
Goal domain:	Potential EBPs (Refer to the Domain Matrix):

Other Resources

Current student supports:	Available equipment:
Team members:	Additional learning experiences:

UNC FRANK PORTER GRAHAM CHILD DEVELOPMENT INSTITUTE | The National Professional Development Center on Autism Spectrum Disorder

Selecting an EBP
AFIRM Team, 2020-R
Page 2 of 3



Autism Focused Intervention Resources & Modules

Selecting an EBP Checklist
For more information, please visit: https://afirm.fpg.unc.edu/

SELECT AN EBP:

IF APPLICABLE, IDENTIFY ADDITIONALS EBPS TO BE USED WITH THE SELECTED EBP:

☐ Reinforcement (R+)	☐ Prompting (PP)	☐ Modeling (MD)
☐ Task Analysis (TA)	☐ Time Delay (TD)	☐ Visual Supports (VS)
☐ Functional Behavior Assessment (FBA)	☐ _____	☐ _____

ADDITIONAL NOTES:

CAPTAIN
California Autism Professional Training and Information Network

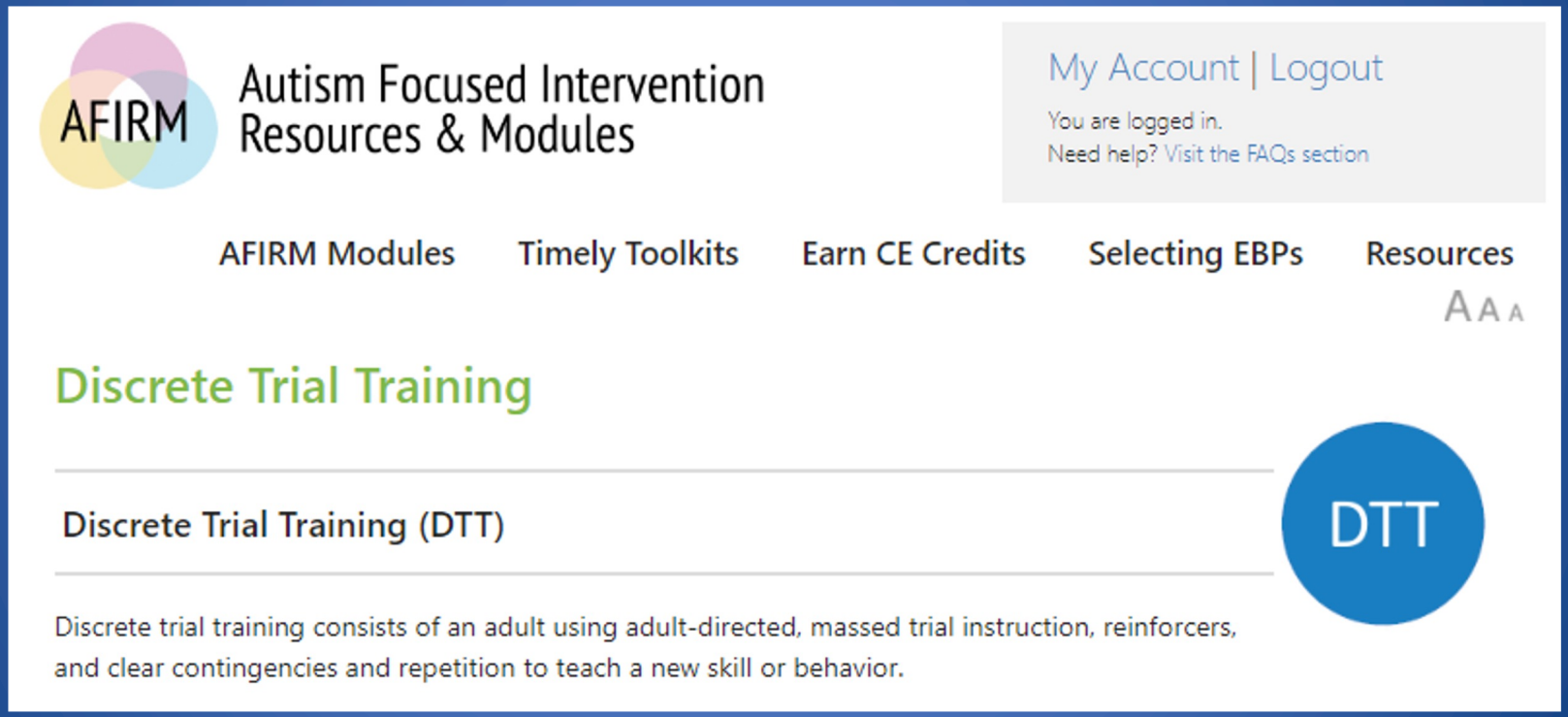
www.captain.ca.gov

SELPA Content Lead
EVIDENCE Based Practices —Autism—
MARIN COUNTY

High Quality Training:

Autism Focused Intervention Resources and Modules (AFIRM)

Designed to help you learn the step-by-step process of planning for, using, and monitoring EBPs with learners with Autism from birth to 22 years of age



CAPTAIN
California Autism Professional Training and Information Network

www.captain.ca.gov

SELPA Content Lead
EVIDENCE Based Practices
—Autism—

Learning Objectives

- Understand the steps to prepare for using the DTT process
- Understand the steps to implement DTT
- Plan how to implement DTT

Evidence by Age and Domain

Name of EBP	Discrete Trial Training (DTT)					
Definition of EBP	Discrete trial training (DTT) is a one-to-one instructional approach (most typically) used to teach skills in a planned, controlled, and systematic manner. DTT is characterized by repeated, or massed, trials that have a definite beginning and end. Within DTT, the use of antecedents and consequences is carefully planned and implemented. The instructional trial begins when the practitioner presents a clear direction or stimulus, which elicits a target behavior. Positive praise and/or tangible rewards are used to reinforce desired skills or behaviors. Data is typically collected on every trial. Other practices that are used in DTT include task analysis, prompting, time delay, and reinforcement.					
	Age Ranges					
Outcome Areas	0-2 Toddlers	3-5 Preschoolers	6-11 Elementary School	12-14 Middle School	15-18 High School	19-22 Young Adults
Communication		✓	✓	✓	✓	✓
Social	✓	✓	✓	✓	✓	✓
Joint attention	✓	✓	✓			
Play		✓	✓			
Cognitive		✓	✓			
School readiness		✓				
Academic/ Pre-academic		✓	✓		✓	
Adaptive/ self-help		✓	✓			
Challenging/ Interfering behavior			✓			
Vocational			✓			
Motor						
Mental health						
Self-determination						

CAPTAIN
California Autism Professional Training and Information Network

www.captain.ca.gov

SELPA Content Lead
EVIDENCE Based Practices —Autism—

What is Discrete Trial Training?

- An evidence-based practice that can be implemented in a therapy, classroom, community, or home setting

- Consists of an adult breaking behavior down into separate (discrete) steps that have a clear beginning, middle, and end

Why Use DTT?

- DTT breaks skills into clear steps that can be carefully taught through repeated trials

- The consistent and predictable delivery of DTT creates a structured learning environment that works well for many students with autism

History of Discrete Trial Training and Autism

- Ivar Lovaas at UCLA pioneered Discrete Trial Training in 1987
  - 89% of children who received early intervention including DTT made significant language, social and behavioral improvements
    - Of those 89%, 49% went on to develop typical language and social skills and were mainstreamed with general education peers

DTT and ABA

- Discrete Trial Training is one strategy derived from the field of Applied Behavior Analysis
- DTT is used in conjunction with other EBPs including Prompting (PP) and Reinforcement (R+)
- DTT is often part of a comprehensive program that utilized a variety of EBPs to address student specific goals and needs

What Does DTT Look Like?

AFIRM Autism Focused Intervention Resources and Modules

Core Components of DTT

A	B	C
Antecedent or Sd	**Behavior or Response**	**Consequence**

Antecedent (Sd)

- Instruction, cue, or stimuli signaling the learner to demonstrate a specific behavior to receive reinforcement
- Usually a short. 1 step direction and response
- Can be verbal or non verbal
  (e.g. “Touch your nose” or handing student item to match to sample)

Behavior

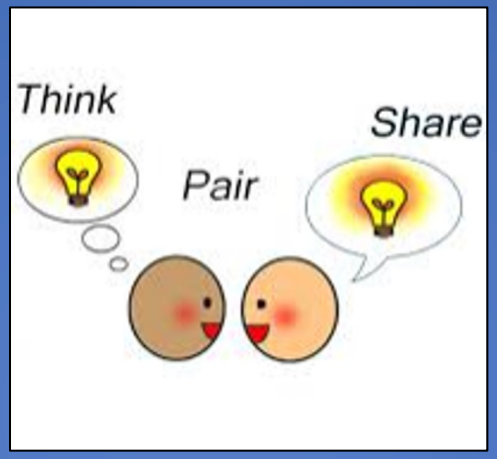
- Break skill into smallest teachable component (e.g. 1 step instruction)
- 3 possible responses to the instruction:
  1. Student responds correctly
  2. Student responds incorrectly
  3. Student does not respond

Consequence

The action that follows the student's behavior or response to stimuli/antecedent

- If Correct = Provide reinforcement
- If No Response = Provide corrective feedback and secure attention before next trial
- If Incorrect = Provide corrective feedback and consider prompting the next trial

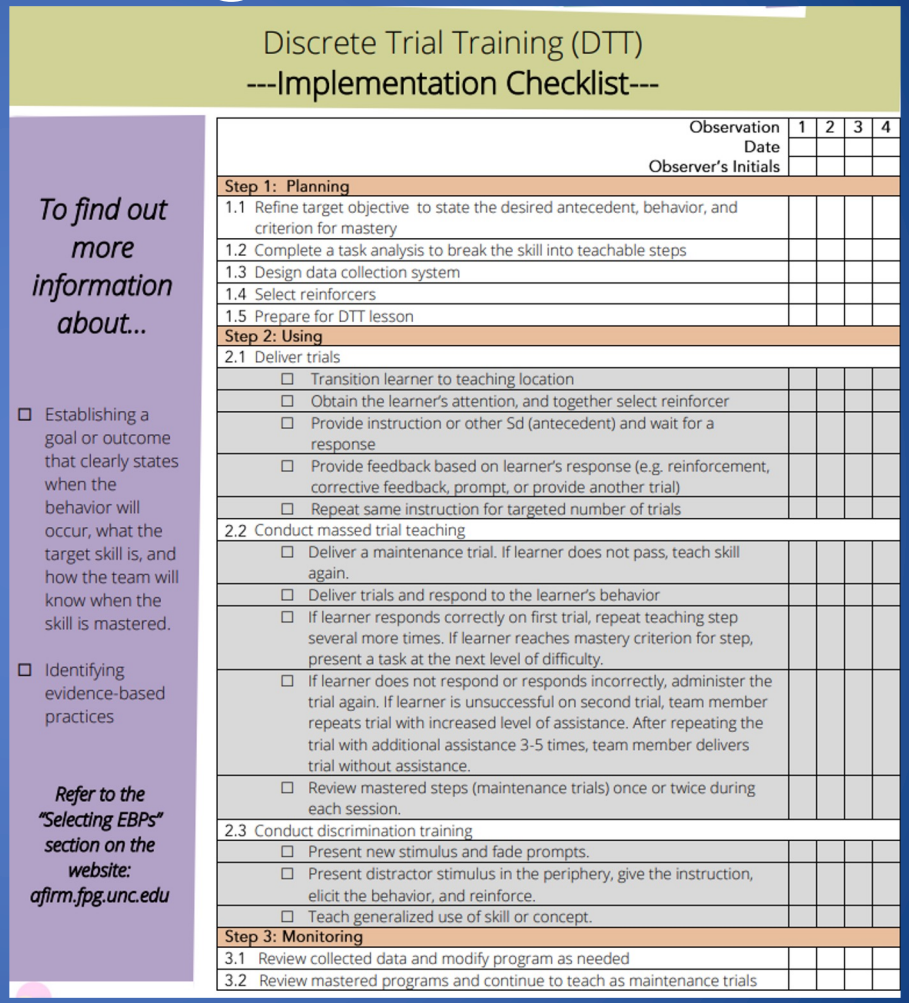
Think-Pair-Share



Discuss a student that you know that could potentially benefit from DTT and discuss what behavior/skill it is that you would like to teach

Implementing DTT

- Plan
- Use
- Monitor



Discrete Trial Training (DTT)
---Implementation Checklist---

To find out more information about...

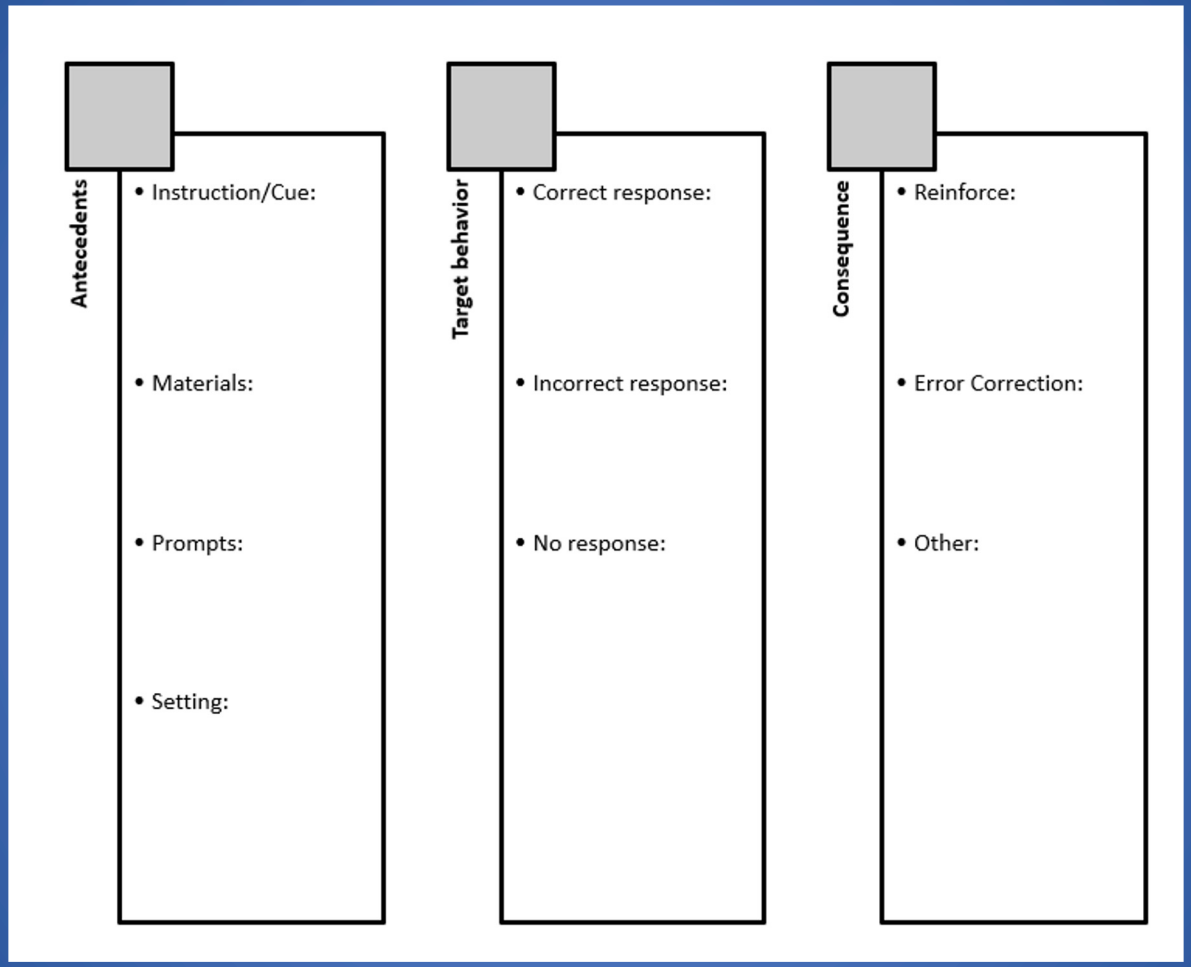
- ☐ Establishing a goal or outcome that clearly states when the behavior will occur, what the target skill is, and how the team will know when the skill is mastered.
- ☐ Identifying evidence-based practices

Refer to the "Selecting EBPs" section on the website: afirm.fpg.unc.edu

Observation / Date / Observer's Initials	1	2	3	4
Step 1: Planning				
1.1 Refine target objective to state the desired antecedent, behavior, and criterion for mastery				
1.2 Complete a task analysis to break the skill into teachable steps				
1.3 Design data collection system				
1.4 Select reinforcers				
1.5 Prepare for DTT lesson				
Step 2: Using				
2.1 Deliver trials				
☐ Transition learner to teaching location				
☐ Obtain the learner's attention, and together select reinforcer				
☐ Provide instruction or other Sd (antecedent) and wait for a response				
☐ Provide feedback based on learner's response (e.g. reinforcement, corrective feedback, prompt, or provide another trial)				
☐ Repeat same instruction for targeted number of trials				
2.2 Conduct massed trial teaching				
☐ Deliver a maintenance trial. If learner does not pass, teach skill again.				
☐ Deliver trials and respond to the learner's behavior				
☐ If learner responds correctly on first trial, repeat teaching step several more times. If learner reaches mastery criterion for step, present a task at the next level of difficulty.				
☐ If learner does not respond or responds incorrectly, administer the trial again. If learner is unsuccessful on second trial, team member repeats trial with increased level of assistance. After repeating the trial with additional assistance 3-5 times, team member delivers trial without assistance.				
☐ Review mastered steps (maintenance trials) once or twice during each session.				
2.3 Conduct discrimination training				
☐ Present new stimulus and fade prompts.				
☐ Present distractor stimulus in the periphery, give the instruction, elicit the behavior, and reinforce.				
☐ Teach generalized use of skill or concept.				
Step 3: Monitoring				
3.1 Review collected data and modify program as needed				
3.2 Review mastered programs and continue to teach as maintenance trials				

Step 1: Planning	
1.1	Refine target objective to state the desired antecedent, behavior, and criterion for mastery
1.2	Complete a task analysis to break the skill into teachable steps
1.3	Design data collection system
1.4	Select reinforcers
1.5	Prepare for DTT lesson

Preparing for DTT: Identify A - B - C



Preparing for DTT

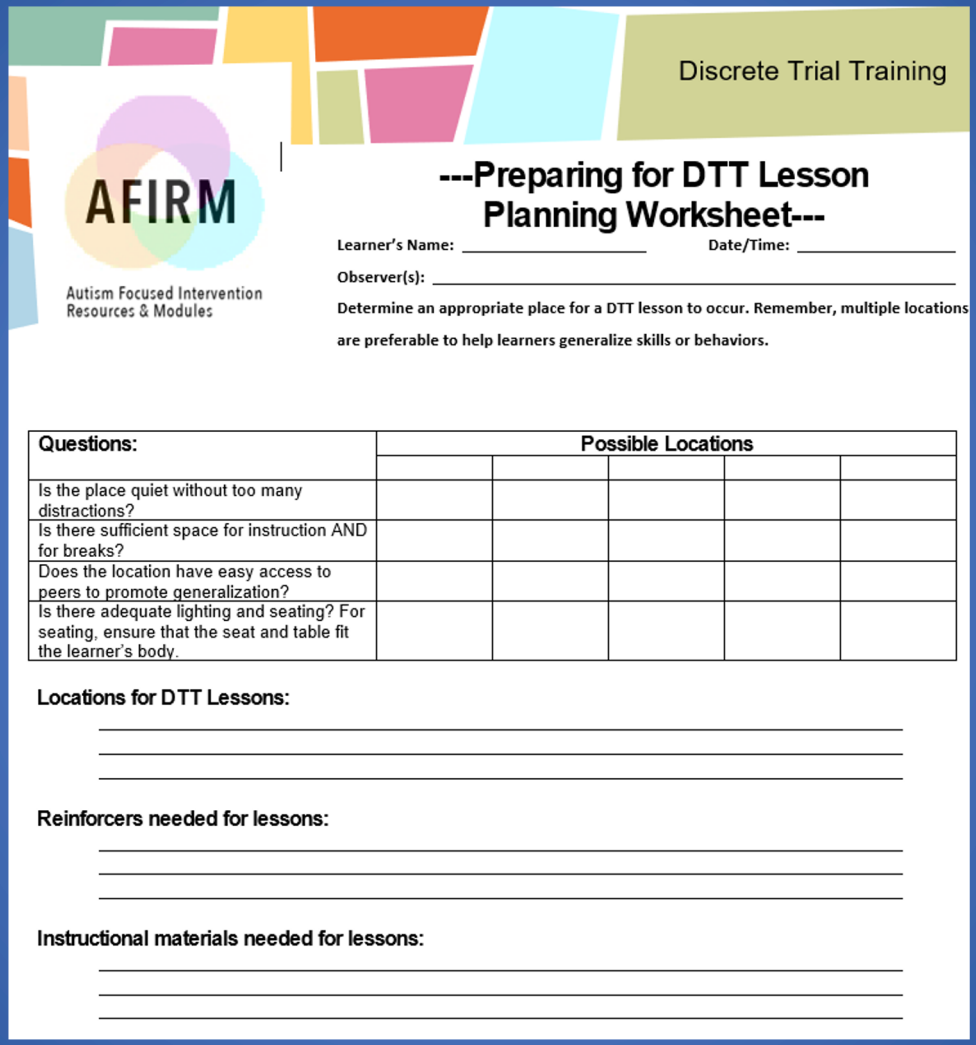
Assemble materials

- Notebook/binder/paper for data collection
- Variety of reinforcers
- Instructional materials

Consider Setting

- Quiet and distraction free
- Room for work and play breaks
- CLose to peers for prompting as needed

Preparing for DTT



Discrete Trial Training

AFIRM

Autism Focused Intervention Resources & Modules

---Preparing for DTT Lesson Planning Worksheet---

Learner's Name: _____ Date/Time: _____

Observer(s): _____

Determine an appropriate place for a DTT lesson to occur. Remember, multiple locations are preferable to help learners generalize skills or behaviors.

Questions:	Possible Locations				
Is the place quiet without too many distractions?					
Is there sufficient space for instruction AND for breaks?					
Does the location have easy access to peers to promote generalization?					
Is there adequate lighting and seating? For seating, ensure that the seat and table fit the learner's body.					

Locations for DTT Lessons:

_____

_____

_____

Reinforcers needed for lessons:

_____

_____

_____

Instructional materials needed for lessons:

_____

_____

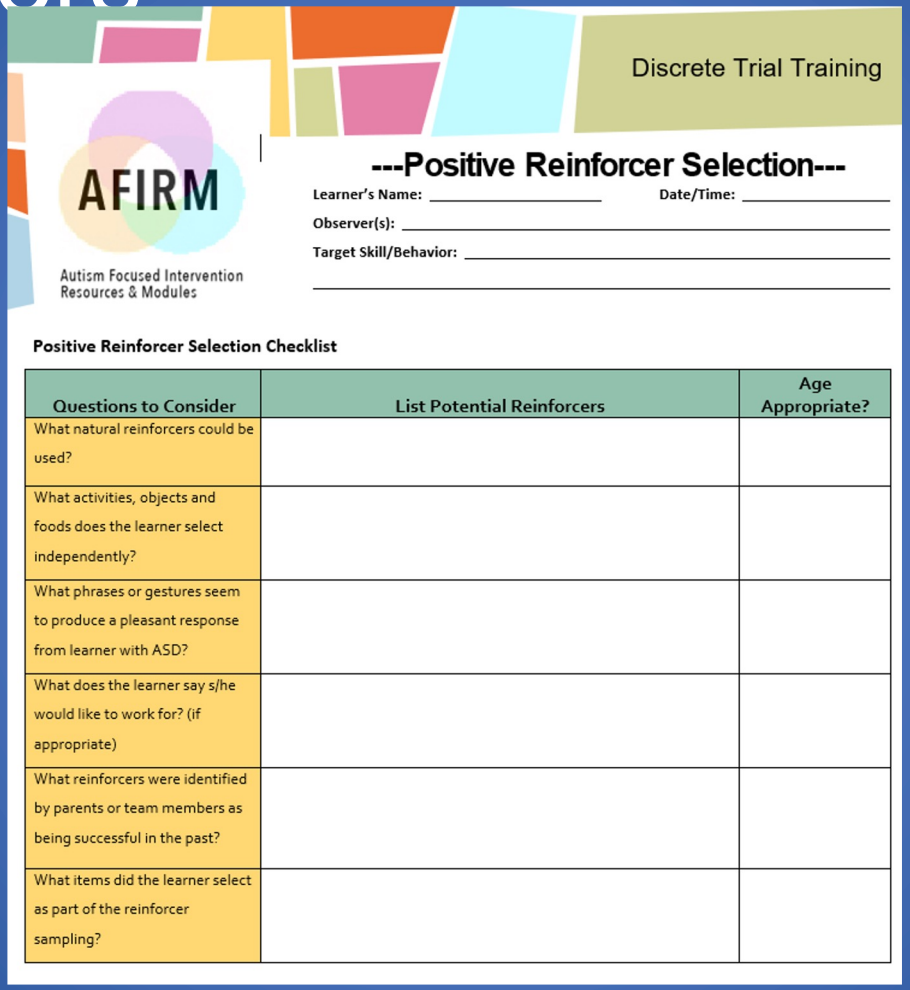
_____

CAPTAIN California Autism Professional Training and Information Network

www.captain.ca.gov

SELPA Content Lead EVIDENCE Based Practices —Autism—

Preparing for DTT: Select Reinforcers



Discrete Trial Training

AFIRM

Autism Focused Intervention Resources & Modules

---Positive Reinforcer Selection---

Learner's Name: _____ Date/Time: _____

Observer(s): _____

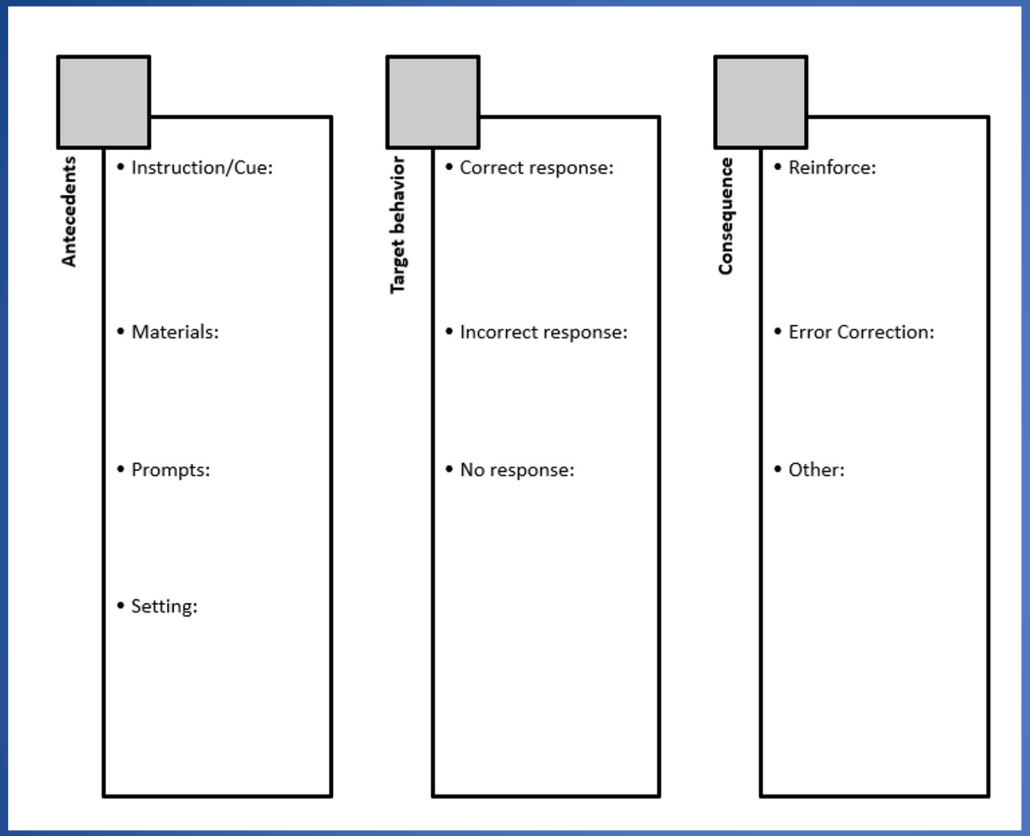
Target Skill/Behavior: _____

_____

Positive Reinforcer Selection Checklist

Questions to Consider	List Potential Reinforcers	Age Appropriate?
What natural reinforcers could be used?		
What activities, objects and foods does the learner select independently?		
What phrases or gestures seem to produce a pleasant response from learner with ASD?		
What does the learner say s/he would like to work for? (if appropriate)		
What reinforcers were identified by parents or team members as being successful in the past?		
What items did the learner select as part of the reinforcer sampling?		

Let's Practice:



Target Skill is Receptively identifying the color Red. Identify the A - B - Cs

Using DTT-Deliver Trials

Step 2: Using	
2.1 Deliver trials	
☐	Transition learner to teaching location
☐	Obtain the learner's attention, and together select reinforcer
☐	Provide instruction or other Sd (antecedent) and wait for a response
☐	Provide feedback based on learner's response (e.g. reinforcement, corrective feedback, prompt, or provide another trial)
☐	Repeat same instruction for targeted number of trials

Using DTT-Massed Trial Training

- Repeating the same learning trial several times in a row to shape behavior
- Prompts are faded to ensure independent, correct and consistent responses
- Once consisten, move into discrimination training phase

Let's Watch Massed Trial with Prompt Fading

Using DTT: Teach Discrimination

- Discrimination training is used to teach a learner how to distinguish one instruction from another and one stimuli from anaother
  - If the learner's goal is to identify squares, they first need to be able to discriminate squares from other shapes

Using DTT: Teach Discrimination

- Gradually and systematically add mastered skills and other items to the field of presented items
- This reinforcement so it is earned after completing multiple trials
- Begin to work on generalization across settings, materials and instructional wording

Let's Watch Discrimination Trainings

CAPTAIN
California Autism Professional Training and Information Network

www.captain.ca.gov

SELPA Content Lead
EVIDENCE Based Practices
—Autism—

Monitor

Goal: _____ correct responses out of _____ presented opportunities to respond

Date(s)										
Trial 1										
Trial 2										
Trial 3										
Trial 4										
Trial 5										
Trial 6										
Trial 7										
Trial 8										
Trial 9										
Trial 10										
Percent +										

- Data should be collected from each trial
- Continuously review trial data to determine progress
- Based upon data, lesson plans may need to be altered

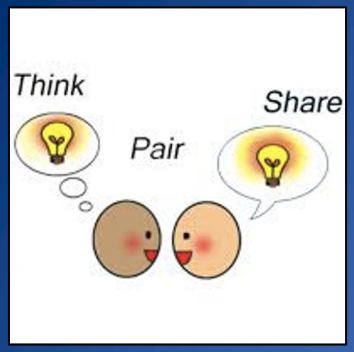
Monitoring DTT and Generalize Skills

- Review mastered programs/skills frequently as maintenance trials in order to teach disrimination and generalize

What if DTT Isn't Working?

- Is the target skills or behavior well defined?
- Is the target skill/behavior measurable and observable?
- Does the learner have the perquisite skills to learn the new skill?
- Is the task completely analyzed?
- Is the learner being reinforced after every correct trial?
- Is DTT being used with fidelity?

Sarah is working on identifying different colors during her massed trialing of DTT. Sarah was doing well with discrimination training and was able to identify the color red, however once her therapist switched to massed trial training, she was unable to identify red again. Identify some possible reasons why Sarah is not able to identify red now and some remedies to the situation.



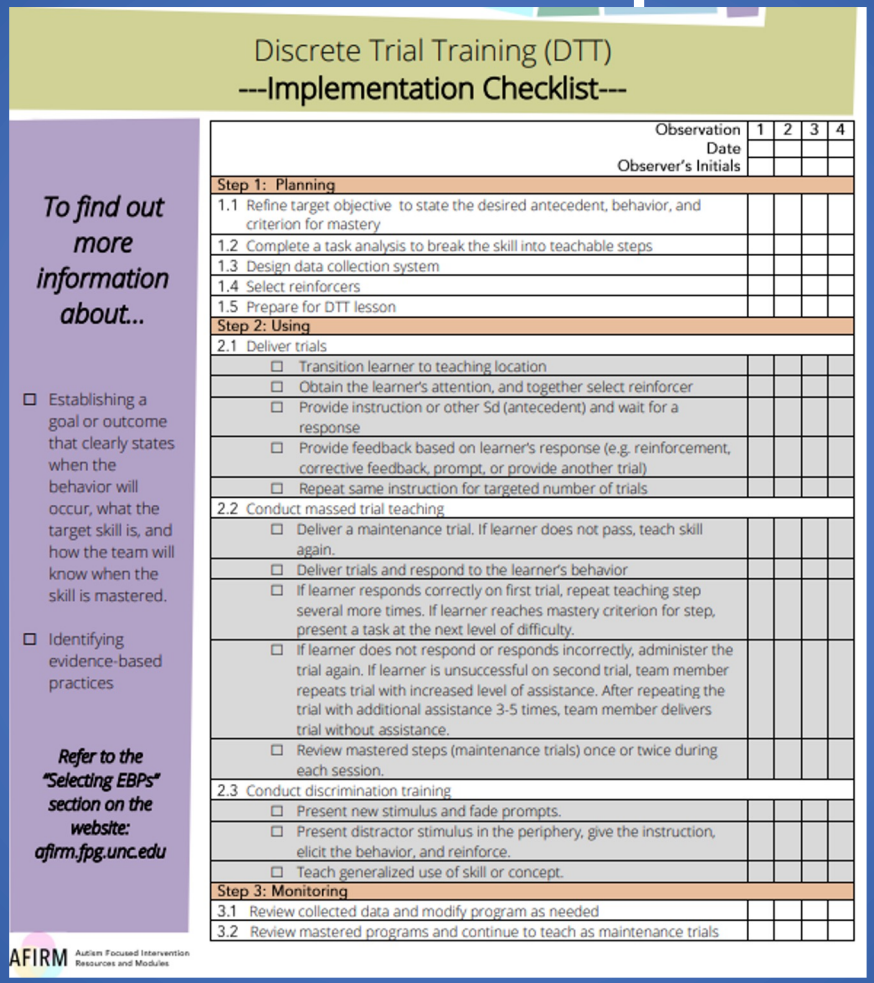
My Takeaways

1. What are 4 things you remember from today's training?

1. What are 2 things you see yourself doing?

1. What is the 1 thing you can implement tomorrow?

Next Steps



Discrete Trial Training (DTT)
---Implementation Checklist---

To find out more information about...

- ☐ Establishing a goal or outcome that clearly states when the behavior will occur, what the target skill is, and how the team will know when the skill is mastered.
- ☐ Identifying evidence-based practices

Refer to the "Selecting EBPs" section on the website: afirm.fpg.unc.edu

AFIRM Autism Focused Intervention Resources and Modules

Observation / Date / Observer's Initials	1	2	3	4
Step 1: Planning				
1.1 Refine target objective to state the desired antecedent, behavior, and criterion for mastery				
1.2 Complete a task analysis to break the skill into teachable steps				
1.3 Design data collection system				
1.4 Select reinforcers				
1.5 Prepare for DTT lesson				
Step 2: Using				
2.1 Deliver trials				
☐ Transition learner to teaching location				
☐ Obtain the learner's attention, and together select reinforcer				
☐ Provide instruction or other Sd (antecedent) and wait for a response				
☐ Provide feedback based on learner's response (e.g. reinforcement, corrective feedback, prompt, or provide another trial)				
☐ Repeat same instruction for targeted number of trials				
2.2 Conduct massed trial teaching				
☐ Deliver a maintenance trial. If learner does not pass, teach skill again.				
☐ Deliver trials and respond to the learner's behavior				
☐ If learner responds correctly on first trial, repeat teaching step several more times. If learner reaches mastery criterion for step, present a task at the next level of difficulty.				
☐ If learner does not respond or responds incorrectly, administer the trial again. If learner is unsuccessful on second trial, team member repeats trial with increased level of assistance. After repeating the trial with additional assistance 3-5 times, team member delivers trial without assistance.				
☐ Review mastered steps (maintenance trials) once or twice during each session.				
2.3 Conduct discrimination training				
☐ Present new stimulus and fade prompts.				
☐ Present distractor stimulus in the periphery, give the instruction, elicit the behavior, and reinforce.				
☐ Teach generalized use of skill or concept.				
Step 3: Monitoring				
3.1 Review collected data and modify program as needed				
3.2 Review mastered programs and continue to teach as maintenance trials				

CAPTAIN California Autism Professional Training and Information Network

www.captain.ca.gov

SELPA Content Lead EVIDENCE Based Practices —Autism—

After the Training…

Please complete the **Post Training Survey**
that will be sent to your email

CAPTAIN
California Autism Professional Training and Information Network

SELPA Content Lead
EVIDENCE Based Practices
—Autism—

CAPTAIN

CAPTAIN_EBPS

@CAPTAIN_EBPS

CAPTAIN

www.captain.ca.gov

captain@marinschools.org