

Evidence Based Practice Training:

Reinforcement

Adapted from Sam, A., & AFIRM Team. (2015). *Reinforcement*. 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/reinforcement>

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 affected by Autism Spectrum Disorders (ASD) across the state of California.



www.captain.ca.gov



What is CAPTAIN

Marin County SELPA in partnership with CAPTAIN, are members of the Statewide System of Support as the SELPA Content Lead for ASD.

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



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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...

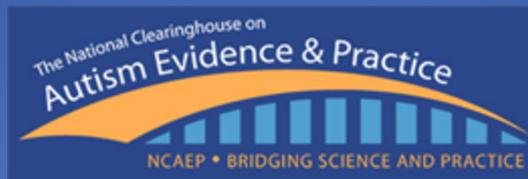
- Please complete the Pre Training Assessment:

Trainer must enter their Regional specific link to Pre-Training Assessment

Learning Objectives

- Describe what EBPs are
- Knowledge: Definitions and uses of positive, negative and token reinforcement
- Knowledge: Principles of effective reinforcement
- Skill: Steps for using reinforcement effectively

What are Evidence Based Practices?



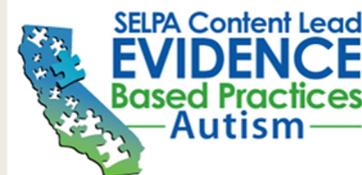
NCAEP definition of an EBP:

“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.



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Name of EBP		Reinforcement (R)					
Definition of EBP		Reinforcement (R) is the application of consequences after a skills or behavior occurs that increases the learner's use of the skills or behavior in future situations. Reinforcement includes positive reinforcement, negative reinforcement (different than punishment), non-contingent reinforcement, and token economy. Reinforcement is a foundational evidence-based practice in that it is almost always used with other evidence-based practices including prompting, discrete trial teaching, functional communication training, naturalistic intervention.					
Outcome Areas		Age Ranges					
		0-2	3-5	6-11	12-14	15-18	19-22
		Toddlers	Preschoolers	Elementary School	Middle School	High School	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						

(Steinbrenner, 2020)

What is Reinforcement?

- Describes a relationship between a behavior and its consequences
- If a behavior increases in probability when a consequence is delivered, that consequence is considered a REINFORCER

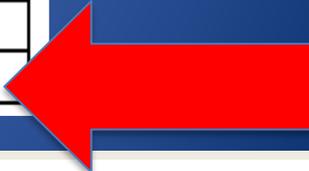
Reinforcement

- Used to increase desired behaviors and skills
- Used in many educational circumstances, not only with students with ASD
- We all work for reinforcement!

Activity: Types of Skills and

Evidence Based Practice and Abbreviated Definition	Evidence by Developmental Domain and Age (years)																																			
	Social			Comm.			Beh.			Joint Attn			Plav			Cog.			School Ready			Acad.			Motor			Adapt.			Voc.			Mental Health		
	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22	0-5	6-14	15-22			
Pivotal Response Training (PRT): Pivotal learning variables guide intervention implemented in settings that build on learner interests and initiative	Green	Yellow	Yellow	Green	Yellow	Yellow							Green	Yellow	Yellow																					
Prompting (PP): Verbal, gestural, or physical assistance that supports skill acquisition	Green	Yellow	Yellow													Green	Yellow	Yellow	Green	Yellow	Yellow	Green	Yellow	Yellow												
Reinforcement (R+): A response occurring after a behavior resulting in an increased likelihood of future reoccurrence of the behavior	Green	Yellow	Yellow	Green	Yellow	Yellow							Green	Yellow	Yellow																					
Response Interruption/Redirection (RIR): Use of prompts or distracters during an interfering behavior that diverts attention and reduces the behavior	Green	Yellow	Yellow										Green	Yellow	Yellow																					
Scripting (SC): A verbal or written model of a skill or situation that is practiced before use in context	Green	Yellow	Yellow	Green	Yellow	Yellow							Green	Yellow	Yellow																					
Self Management (SM): Instruction on discrimination between appropriate and inappropriate behaviors and accurate self-monitoring and rewarding of behaviors																Green	Yellow	Yellow	Green	Yellow	Yellow															
Social Narratives (SN): Descriptions of social situations with examples of appropriate responding	Green	Yellow	Yellow	Green	Yellow	Yellow							Green	Yellow	Yellow																					
Social Skills Training (SST): Direct instruction on social skills with rehearsal and feedback to increase positive peer interaction.	Green	Yellow	Yellow	Green	Yellow	Yellow							Green	Yellow	Yellow																					
Structured Play Group (SPG): Adult lead small group activities that include typically developing peers and use prompting to support performance																																				
Task Analysis (TA): The process of breaking a skill into small steps that are systematically chained together				Green	Yellow	Yellow																														
Technology-Aided Instruction and Intervention (TAII): Intervention using technology as a critical feature	Green	Yellow	Yellow	Green	Yellow	Yellow							Green	Yellow	Yellow	Green	Yellow	Yellow	Green	Yellow	Yellow	Green	Yellow	Yellow												
Time Delay (TD): Delaying a prompt during a practice opportunity in order to fade the use of prompts	Green	Yellow	Yellow	Green	Yellow	Yellow							Green	Yellow	Yellow	Green	Yellow	Yellow	Green	Yellow	Yellow															
Video Modeling (VM): A video recording of a targeted skill that is viewed to assist in learning	Green	Yellow	Yellow	Green	Yellow	Yellow							Green	Yellow	Yellow	Green	Yellow	Yellow	Green	Yellow	Yellow															
Visual Support (VS): Visual display that supports independent skill use.	Green	Yellow	Yellow	Green	Yellow	Yellow							Green	Yellow	Yellow	Green	Yellow	Yellow	Green	Yellow	Yellow															

Ages



Positive and Negative Reinforcement

- **Positive** = adding something following the behavior that increases future probability of the behavior (e.g. giving a reward)
- **Negative** = removing something following the behavior that increases future probability of the behavior (e.g. do it right this time and I will let you out of doing the rest of them)

Types of Consequences

	Positive (Give)	Negative (Take)
Reinforcement 	Increases Behavior 	Increases Behavior 
Punishment 	Decreases Behavior 	Decreases Behavior 

Examples

	Positive (Give)	Negative (Take)
Reinforcement 	Computer Time	Homework Pass
Punishment 	Extra Work	Loss of Recess

Lets Practice + or - Reinforcers Which Reinforcer Am I?

1. I am given to a student for being on task....
2. I am a job that is removed because the student did a great job on the first assignment
3. I am given to the student for getting all five answers correct.



Reinforce vs Bribe????

- Proper use of reinforcement involves increasing a desired or appropriate behavior or skill
- Often a bribe involves paying someone off to get them to STOP an inappropriate behavior

Lets Practice Reinforce or Bribe?

1. Dad gives toddler candy to get him to stop crying
2. Teacher gives student a high 5 for getting the multiplication answer correct
3. Para shows student his favorite toy after he falls to the floor during a transition and offers the toy to the student to get him to do the transition



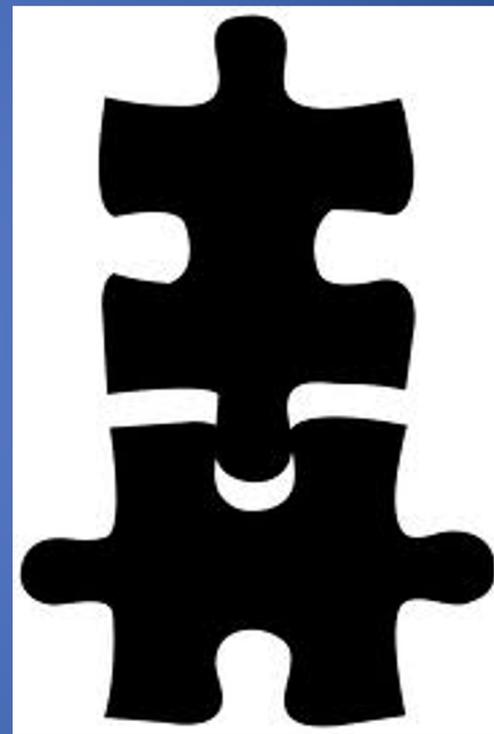
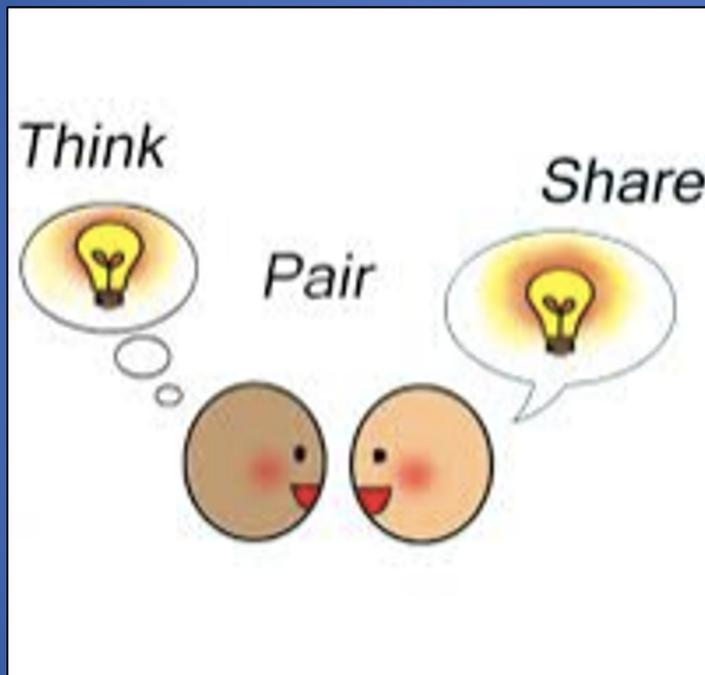
Levels of Reinforcers

- Primary: Needs it for survival. Is reinforcing at a “biological” level.
 - Food, drink, physical contact, physical movement/sensory stimulation....
- Secondary: Acquires value often by being paired with a primary.
 - Objects, social interactions, activities
- Token: A secondary reinforcer that can be exchanged for other reinforcers
 - Money, tickets, points

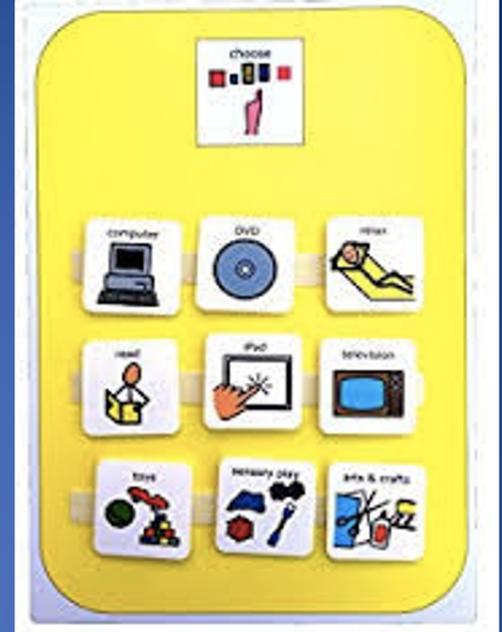
Let's Look at Different Types of Reinforcers



How Might Reinforcement Be Different for Those With ASD?



Tip: Make It Visual With a Reinforcer Menu

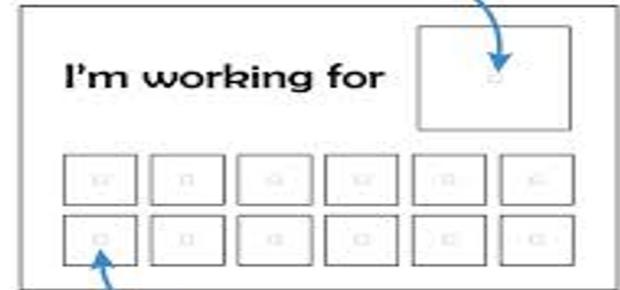


Token Economy

- A system where the learners is taught to exchange a token or tokens for other items
- Tokens are earned for appropriate skills and behaviors

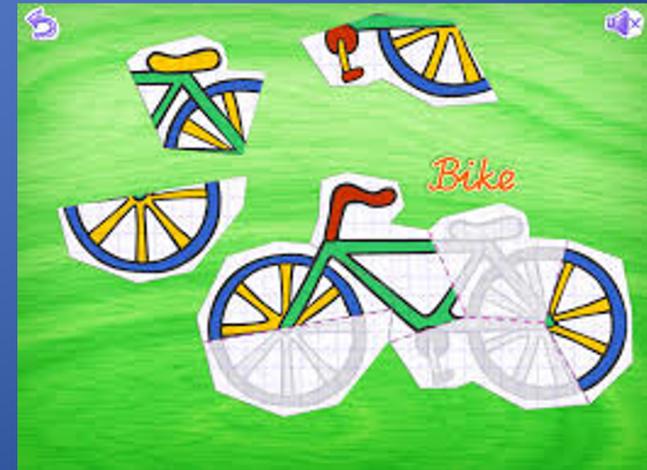
One Example of a Token Economy

A chosen reinforcer is placed here



Earned tokens are placed into these spaces

	=	1 point
Use your points to buy treats:		
 candy 5 points	 ipod break 8 points	 break area 5 points
 ipad break 10 points	 computer 10 points	 coloring break 8 points



Tip: Consider Developmental Level

- Token Economies may not be appropriate for younger children or those who function younger than preschool level



Let's See Some Examples



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Resources and Modules

Reinforcement Rarely Stands Alone

- Reinforcement is a fundamental practice that is almost always used with other evidence-based practices
- Reinforcement of new skill while using prompting, visual supports, extinction of another undesired behavior, etc.

Principles of Effective Reinforcement:

- Always use student selected rewards
- Determine potential reinforcers through preference assessment:
 - Inventories or Checklists
 - Observations
 - Sampling procedures

Identify Potential Reinforcers to Use



Reinforcement

---R+ 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 to her team members as being successful in the past?		
What items did the learner select as part of the reinforcer sampling?		

Practice with Feedback

Use the inventory
with a partner to
discover their
potential
reinforcers...



Principles of Effective Reinforcement: Contingent Rewards

- Know and define your target response and performance criteria
- Make the reward contingent upon the target (or an appropriate approximation)
- Give reward immediately (within 30 seconds is ideal)

Let's See Some Examples



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Autism Focused Intervention
Resources and Modules

Principles of Effective Reinforcement

- Try to use naturally occurring rewards whenever possible
 - Use the schedule to your advantage
 - Have the outcome be it's own reward
 - Use student selected teaching materials
- Using naturally occurring rewards will help with maintaining the behavior or skill

Principles of Effective Reinforcement

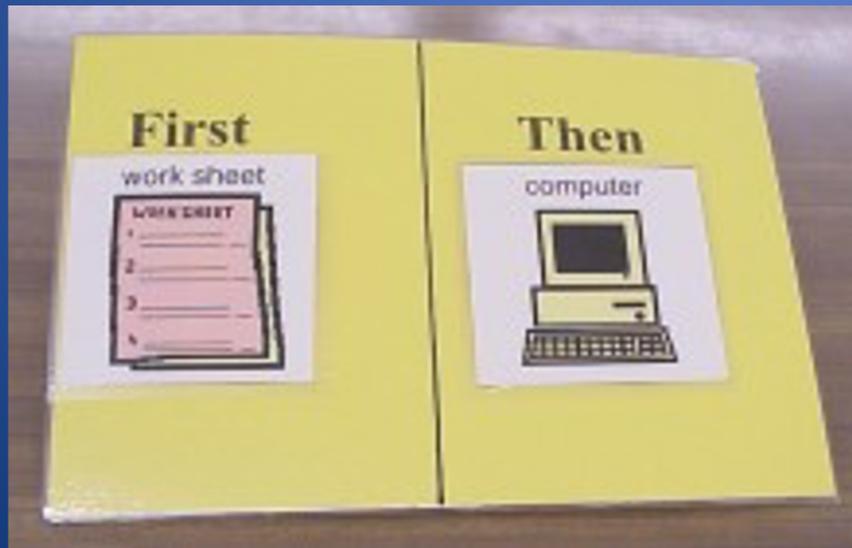
- Pair other rewards with verbal and social praise so that verbal praise (a more naturally occurring reward) can maintain the behavior or skill
 - Pair a “Primary” with a “Secondary”

Principles of Effective Reinforcement

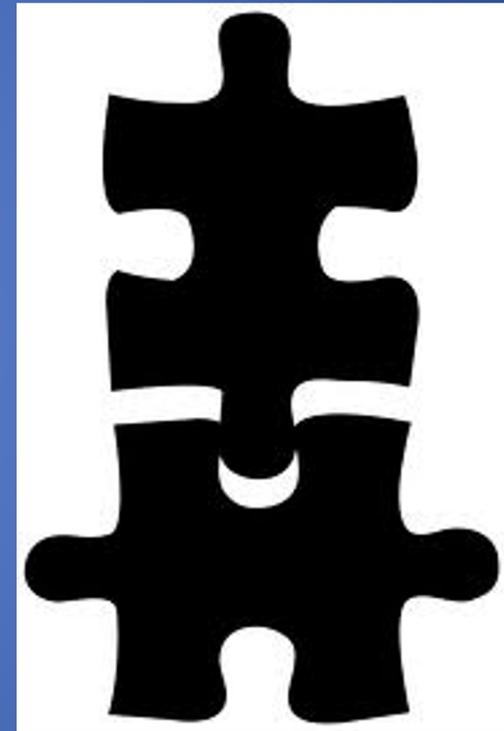
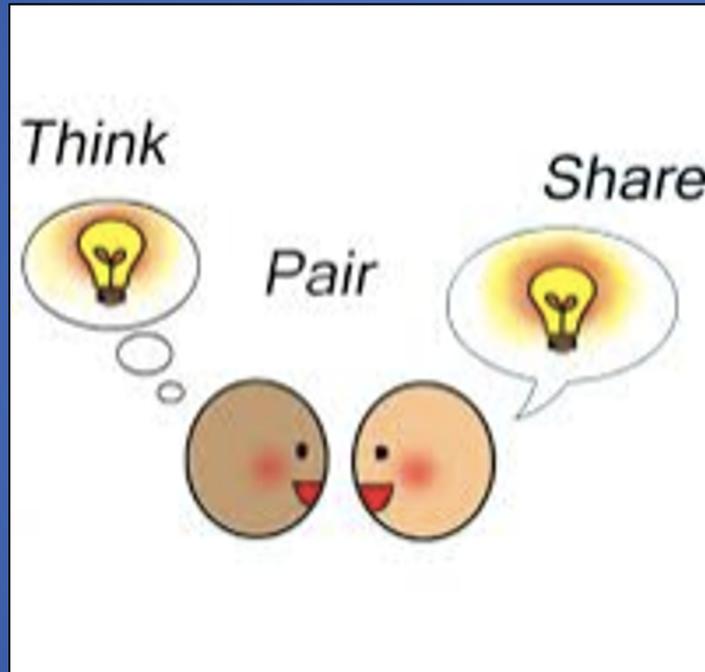
- Give the JUST RIGHT amount
 - Satiation = low motivation
 - Deprivation = high motivation
- Do not allow free access
- Create a sense of need
 - Give part but not all
 - Show but don't give

Helpful Hint: Make it Visual

- Use Token Systems or First Then Systems



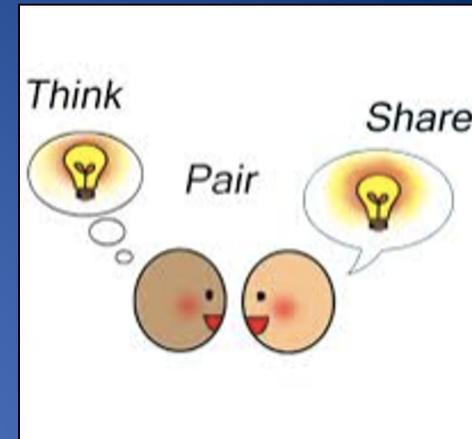
Why Can a Visual Representation Be More Helpful for Those With ASD?



Make a Skill or Behavior Stick!

- Thinning the reinforcement over time can help to maintain the skill or behavior
- Behaviors with a history of intermittent reinforcement are resistant to extinction
- In other words.... They STICK!

1. Student was working really hard for hot wheels, but by Wednesday was not working hard anymore...
1. Student was using a first _____ then _____ to earn a break and was working really hard for it, but is now not taking the break when it is earned and wants to keep working
1. The student is not earning tokens for staying in seat for 3 minutes, is getting up more frequently and sitting in chair is actually decreasing



Steps to Implement Reinforcement

Reinforcement (R+) ---Implementation Checklist---

	Observation	1	2	3	4
Date					
Observer's Initials					
Step 1: Planning					
1.1 Collect data on target skill or behavior					
1.2 Establish performance criteria for program goals					
1.3 Identify reinforcers					
1.4 Prepare supporting materials:					
<input type="checkbox"/> Positive: create a reinforcer menu and schedule					
<input type="checkbox"/> Token economy: establish token economy system					
<input type="checkbox"/> Negative: prepare pictorial, written, or verbal instructions					
Step 2: Using					
- Positive Reinforcement:					
<input type="checkbox"/> Deliver reinforcement each time learner uses target skill/behavior					
<input type="checkbox"/> Prevent satiation by varying reinforcers					
<input type="checkbox"/> Fade reinforcers and use reinforcers consistently across settings					
- Token Economy:					
<input type="checkbox"/> Describe to learners components of token economy program					
<input type="checkbox"/> Provide a token to learner each time skill/behavior is displayed					
<input type="checkbox"/> Learners select reinforcement from the reinforcer menu					
<input type="checkbox"/> Fade tokens and use tokens consistently across settings					
-Negative Reinforcement:					
<input type="checkbox"/> Cue learner to use target skill/behavior					
<input type="checkbox"/> Remove negative reinforcer when target skill or behavior is used					
<input type="checkbox"/> Transition to positive reinforcement					
Step 3: Monitoring					
3.1 Collect data on target behaviors					
3.2 Adjust reinforcement based on performance criteria					
3.2 Determine next steps based on learner progress					

Identify the Skill or Behavior

- Determine which skill, step or behavior you will be working on
- Collect baseline data

Reinforcement



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---Event Sampling Data Collection---

Learner's Name: _____ Date/Time: _____

Observer(s): _____

Target Behavior(s): _____

Event Sampling:

Use event recording to collect the frequency data at every instance the behavior occurs.

Date	Skill/Target Behavior	Total	Before, During, or After reinforcement

Anecdotal Notes:

Date	Observer Initials	Target Skill/Behavior, Comments, and Plans for Next Steps

Reinforcement



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---Duration Data Collection---

Learner's Name: _____ Date/Time: _____

Observer(s): _____

Target Behavior(s): _____

Activity/Setting(s): _____

Duration Data:

Use duration data to record how long a learner engages in a particular behavior or skill.

Date	Setting/Activity	Start Time	End Time	Total Minutes	Before, During, or After reinforcement

Anecdotal Notes:

Date	Observer Initials	Target Skill/Behavior, Comments, and Plans for Next Steps

Set Your Performance Criteria for Earning

- Determine the level of performance you will require for reinforcement to be earned
- Fixed (every time) or intermittent (sometimes)
- Ratio (based on frequency) or interval (based on time)

Remember if you are using Shaping, criterion may change rapidly

Implement and Evaluate

- If behavior or skill is improving, one can assume that reinforcement is having the desired effect
- If skill or behavior is not improving:
 - Reassess potential reinforcers
 - Reevaluate the skill or criterion you have set
 - Look at the other EBPs you are using to determine appropriateness and effectiveness

Reinforcement (R+) ---Implementation Checklist---

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Date					
Observer's Initials					
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3.2 Determine next steps based on learner progress					

Use the Implementation Checklist to Insure Fidelity Across Implementers

Share Information With Families



A PARENT'S GUIDE TO R+

This introduction provides basic information about reinforcement (R+).

What is reinforcement?

- R+ is an evidence-based practice for child and youth with autism spectrum disorder (ASD) from birth to 22 years old.
- Reinforcement describes the relationship between behavior and a consequence that follows the behavior that increases the likelihood the skill or behavior is performed again.
- The three reinforcement procedures are positive reinforcement, negative reinforcement, and token economy programs.

Why use reinforcement with my child?

- Reinforcement is used to teach target skills and increase desired behaviors.
- Research studies have shown that reinforcement has been used effectively with many age groups to achieve outcomes in the following areas: joint attention, communication, social, behavior, adaptive, play, school readiness, motor, academic, cognitive, and vocational.

What activities can I do at home?

- Praise or reinforce appropriate behaviors (such as saying hello, completing chores, following directions)
- Use natural reinforcers whenever possible. For example, if your child signs water, reinforce the use of the sign by providing a glass of water.
- Create a list of favorite activities or objects to share with your child's teachers for possible reinforcers to use at school.

This parent introduction to R+ was designed as a supplemental resource to help answer basic questions about this practice.

To find out more about how R+ is used with your child, speak with _____

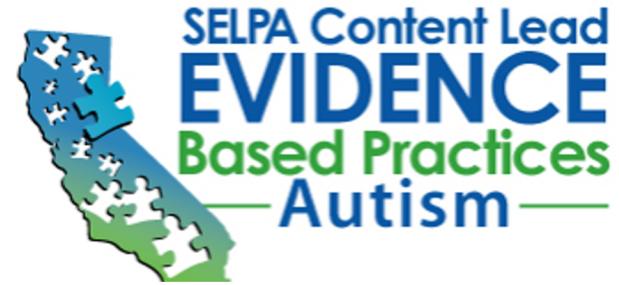
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Post Training

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