

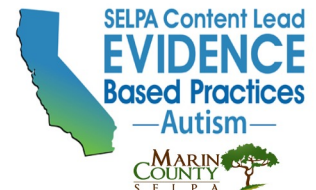
Evidence Based Practice Training:

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>



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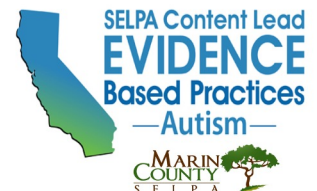


What is CAPTAIN

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.



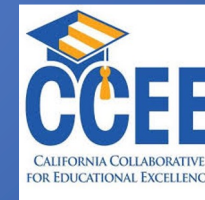
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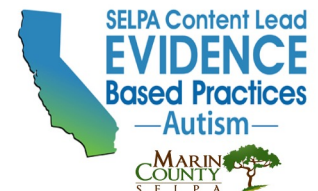
What is CAPTAIN

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.



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Levels of Professional Development to Reach Implementation



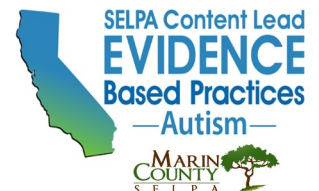
This is a Workshop/Training and is designed to increase your KNOWLEDGE of the topic. Implementation supports to assist you with use of this EBP will be outlined following the TRAINING/WORKSHOP

Before We Begin...

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



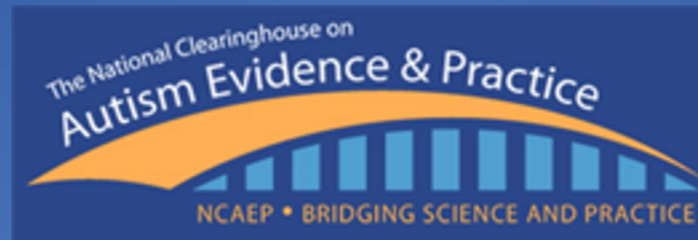
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Learning Objectives

- 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?



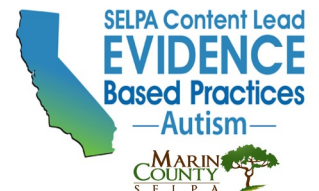
NCAEP definition of an EBP:

“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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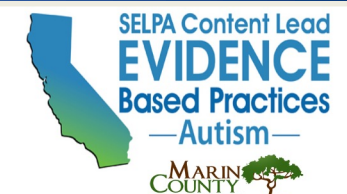
Evidence Based Practice Matrix (28 EBPs)

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						
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.fg.uic.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:

Selecting an EBP
 AFIRM Team, 2020-8
 Page 1 of 3

 Autism Focused Intervention Resources & Modules

 Selecting an EBP Checklist
 For more information, please visit: <https://afirm.fg.uic.edu/>

CHECK ANNUAL GOAL FOR:

1. Context (When/Antecedent)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. Target goal/behavior/skill (What/Behavior the learner is to perform)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3. Mastery (How/Criterion for learner progress/mastery)	<input type="checkbox"/> Yes	<input type="checkbox"/> 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:

Selecting an EBP
 AFIRM Team, 2020-8
 Page 2 of 3

 Autism Focused Intervention Resources & Modules

 Selecting an EBP Checklist
 For more information, please visit: <https://afirm.fg.uic.edu/>

SELECT AN EBP:

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IF APPLICABLE, IDENTIFY ADDITIONAL EBPs TO BE USED WITH THE SELECTED EBP:

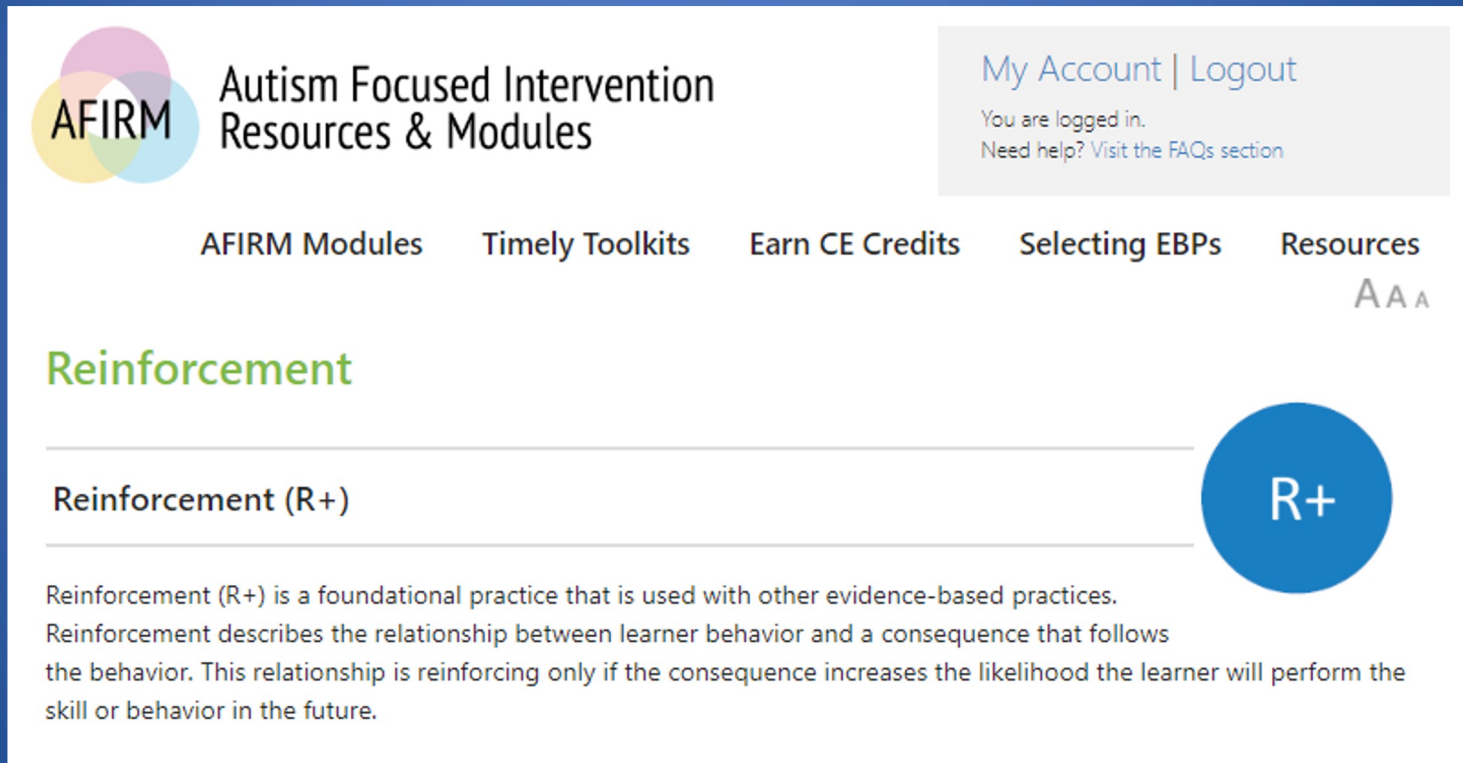
<input type="checkbox"/> Reinforcement (R+)	<input type="checkbox"/> Prompting (PP)	<input type="checkbox"/> Modeling (MD)
<input type="checkbox"/> Task Analysis (TA)	<input type="checkbox"/> Time Delay (TD)	<input type="checkbox"/> Visual Supports (VS)
<input type="checkbox"/> Functional Behavior Assessment (FBA)	<input type="checkbox"/> _____	<input type="checkbox"/> _____

ADDITIONAL NOTES:





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



The screenshot shows the AFIRM website interface. At the top left is the AFIRM logo, a Venn diagram with three overlapping circles (pink, yellow, blue) and the text 'AFIRM Autism Focused Intervention Resources & Modules'. To the right is a user account section with 'My Account | Logout', 'You are logged in.', and 'Need help? Visit the FAQs section'. Below this is a navigation bar with links: 'AFIRM Modules', 'Timely Toolkits', 'Earn CE Credits', 'Selecting EBPs', and 'Resources'. A 'AAA' accessibility icon is visible. The main content area is titled 'Reinforcement' in green. Below the title is a horizontal line, followed by the text 'Reinforcement (R+)' and a blue circular icon containing 'R+'. Below this is a paragraph: 'Reinforcement (R+) is a foundational practice that is used with other evidence-based practices. Reinforcement describes the relationship between learner behavior and a consequence that follows the behavior. This relationship is reinforcing only if the consequence increases the likelihood the learner will perform the skill or behavior in the future.'

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 Autism
- We all work for reinforcement!

Let's
Practice!



Checking In

Reinforcement can be used to address a variety of skills and behaviors.



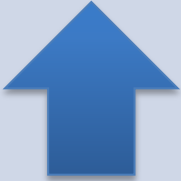

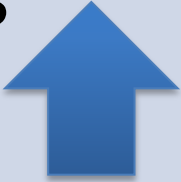



Select the goal that should not be addressed by using reinforcement:

- Increase amount of time a student remains seated in class.
- Increase the number of math problems a student completes.
- Decrease the number of times a student interrupts a teacher.



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 or do something illegal or elicit

Lets Practice Reinforce or Bribe?

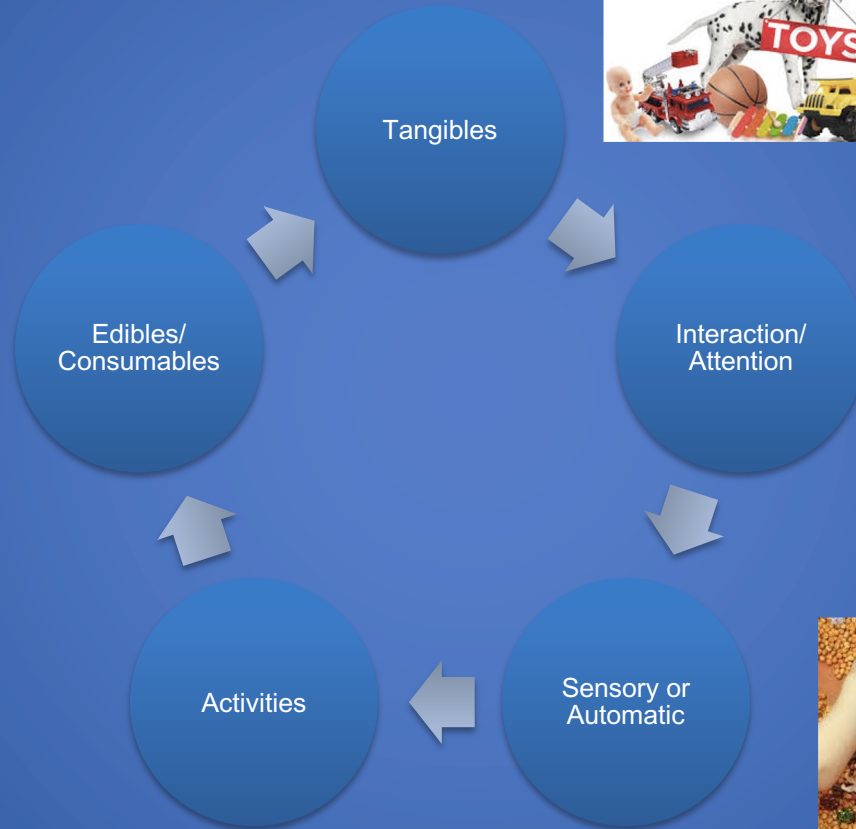


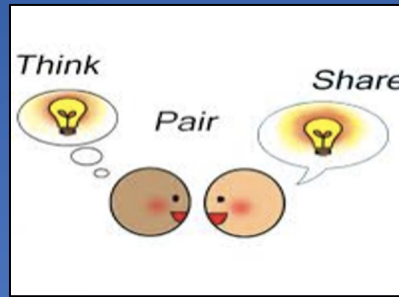
1. Dad gives toddler candy to get him to stop crying
2. Teacher gives student a high 5 for getting the multiplication answer correct
3. Para shows student his favorite toy after he falls to the floor during a transition and offers the toy to the student to get him to do the transition

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 autism?
- What things that might be more valued, less valued?

Tip: Make It Visual With a Reinforcer Menu

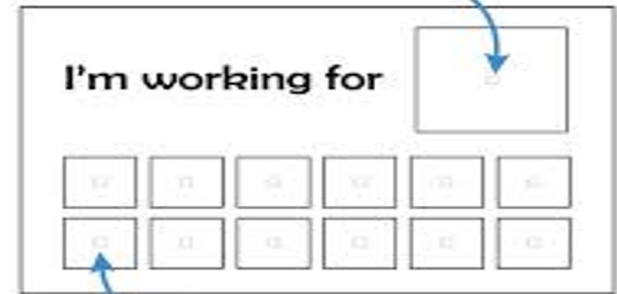


Token Economy


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

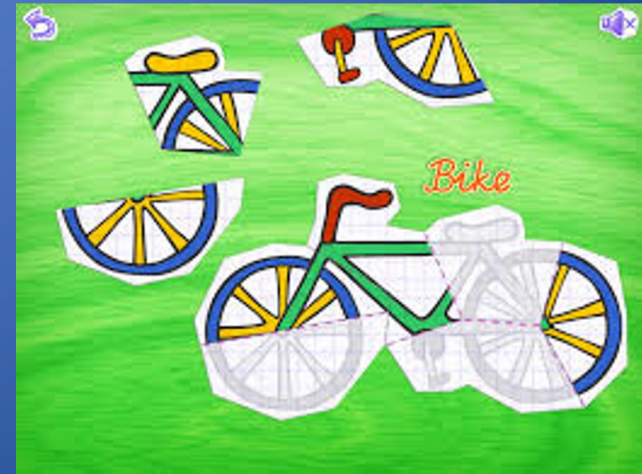
One Example of a Token Economy

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
 ipod 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



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

Let's See an Example



AFIRM Autism Focused Intervention
Resources and Modules

Identify Potential Reinforcers to Use



Autism Focused Intervention Resources & Modules

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 An Example



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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

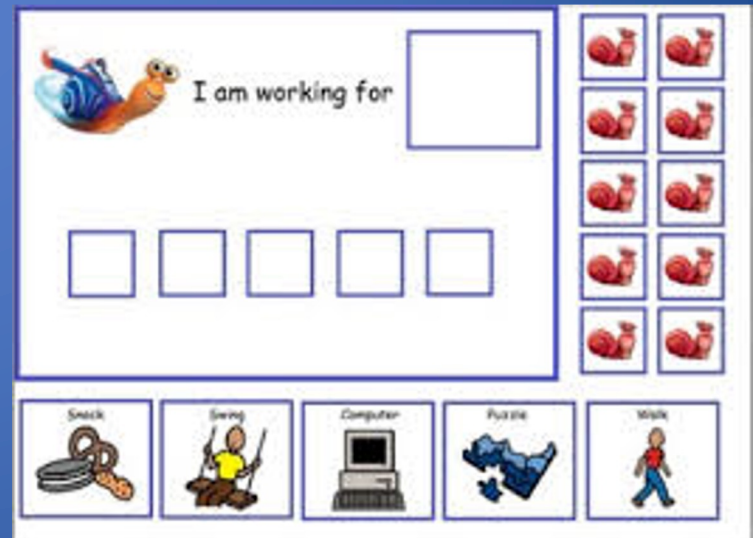
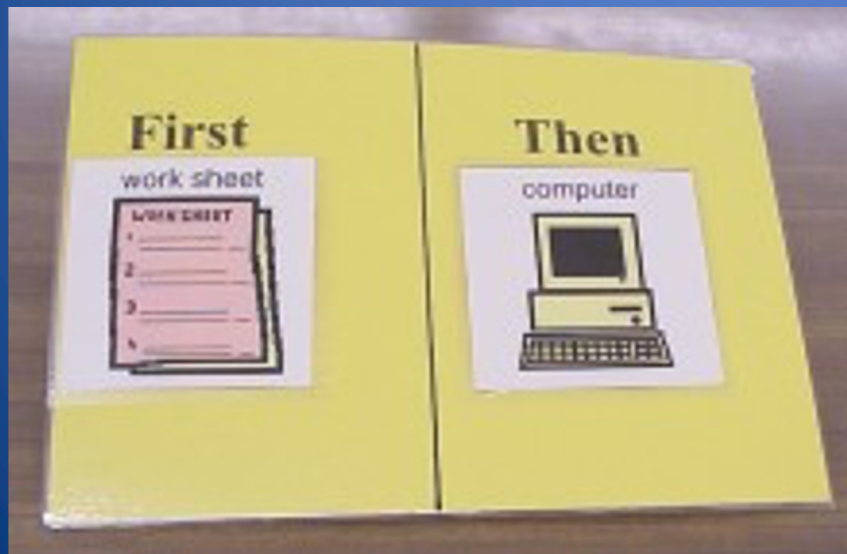
- Pair other rewards with verbal and social praise so that verbal praise (a more naturally occurring reward) can maintain the behavior or skill
 - Pair a “Primary” with a “Secondary”

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

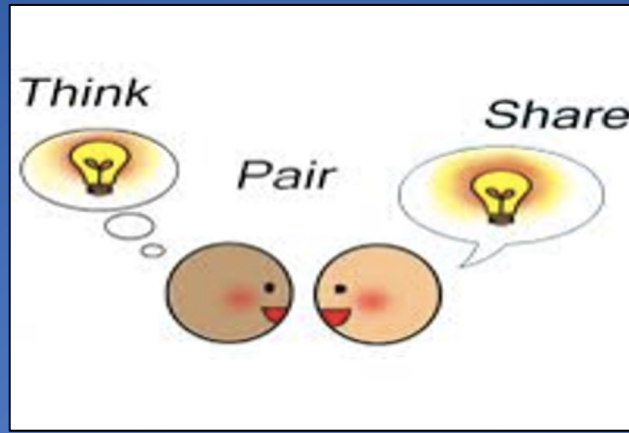
Helpful Hint: Make it Visual

- Use Token Systems or
- First Then Systems



Using a Token System

- Describe to learners with ASD components of the token economy program
- Provide a token to the learner with ASD each time the skill or behavior is displayed
- Learners select reinforcement from the reinforcer menu
- Thin tokens over time and use tokens consistently across settings



Why Can a Visual Representation Like Token System Be Helpful for Those With Autism?

Let's See An Example of A Token System in Use



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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!

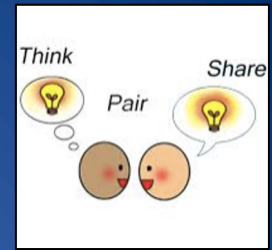
Class Store

Token 'Store'

Consider creating a "store" in the classroom that contains the "bank," the reinforcer menu, and the desired items. Decide how often the learners can exchange tokens (daily, weekly, or as soon as the designated number of tokens has been acquired). It is often beneficial to provide frequent opportunities at the beginning of the program to establish a clear understanding of how a token economy program works and to maintain motivation. Also, balance the learner's demand for the item with his/her ability to acquire the skill quickly and efficiently. At first, include items that can be easily obtained based on current skill level. More expensive and highly attractive items might take more time to earn and can be added later to the reinforcer menu.



Troubleshoot the Following Scenarios



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

Planning for Reinforcement


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

Identify the Skill or Behavior

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

Baseline Data

Reinforcement



---Event Sampling Data Collection---

Learner's Name: _____ Date/Time: _____

Observer(s): _____

Target Behavior(s): _____

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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



---Duration Data Collection---

Learner's Name: _____ Date/Time: _____

Observer(s): _____

Target Behavior(s): _____

Activity/Setting(s): _____

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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)

Using Reinforcement

Step 2: Using
- <i>Positive Reinforcement:</i>
<input type="checkbox"/> Deliver reinforcement each time learner uses target skill/behavior
<input type="checkbox"/> Prevent satiation by varying reinforcers
<input type="checkbox"/> Thin reinforcers and use reinforcers consistently across settings
- <i>Token Economy:</i>
<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"/> Thin tokens and use tokens consistently across settings
- <i>Negative Reinforcement:</i>
<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

Monitor Reinforcement

Step 3: Monitoring

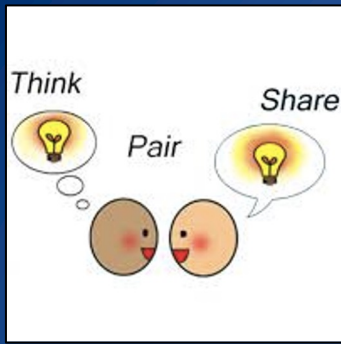
3.1 Collect data on target behaviors

3.2 Adjust reinforcement based on performance criteria

3.3 Determine next steps based on learner progress

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



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

Reinforcement (R+) Implementation Checklist

Observation Date	Observer's Initials			
	1	2	3	4
Step 1: Planning				
1.1 Collect data on target skill or behavior				
1.2 Establish performance criteria for program goals				
1.3 Identify reinforcers				
1.3 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				
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<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				

AFIRM Autism Focused Intervention Resources & Modules

Reinforcement (R+) Step-by-Step Guide

BEFORE YOU START...

Each of the following points is important to address so that you can be sure the selected EBP is likely to address the learning needs of your student.

Have you found out more information about...?

- Identified the behavior...
- Collected baseline data through direct observation...
- Established 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...

If the answer to any of these is "no," review the process of how to select an EBP.

For more information visit:
www.afirm.fpg.unc.edu

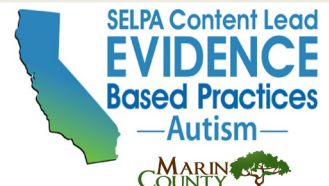
National Professional Development Center on ASD
 2015

After the Training...

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



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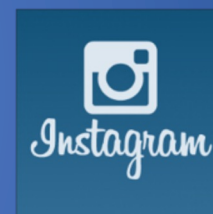




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