



# CAPTAIN

## California Autism Professional Training and Information Network

The screenshot shows the CAPTAIN website homepage. At the top left is the CAPTAIN logo with the text "California Autism Professional Training and Information Network". To the right are navigation tabs for "Home", "About", and "News". Below the logo is a "Welcome" section with a paragraph and a bulleted list of CAPTAIN's objectives. To the right is a "Quick Links" section listing various resources like "National Professional Development Center On Autism Spectrum Disorders" and "National Autism Center". Below the welcome text is a "Participated in summer intensive training activities" section with a video player and a photo of a group of people in a meeting. At the bottom is a large photo of a group of people sitting around a table in a meeting room.

**Welcome**

CAPTAIN is a multiparty network developed to support the understanding and use of Evidence Based Practices for individuals affected by Autism Spectrum Disorder across the state.

CAPTAIN is dedicated to the following:

- Providing statewide access to training and resources in Evidence Based Practices (EBPs) that are culturally sensitive, family centered, cost-effective, and competency based.
- Establishing supports that are locally based with training of trainers at the local level.
- Empowering how to use EBPs to assist students in accessing the California Common Core State Standards and developing College and Career Readiness.
- Providing ongoing training, support, and technical assistance to implement EBPs and ensure fidelity of implementation.
- Supporting the development of local multiparty collaborations to support consistent use of EBPs.
- Providing an annual training summit and a forum for collegial communication and support to CAPTAIN Cadre members.
- Providing web based access to materials and resources that are vetted and align with current EBPs.
- Providing information and outreach to other interested stakeholders and provider groups who could benefit from learning more about EBPs (i.e., Professional Organizations, Higher Education, Self Advocates, Allied Health Providers).

**Quick Links**

- National Professional Development Center On Autism Spectrum Disorders
- National Autism Center
- Autism Informed Modules
- CAPTAIN Summit Resources
- Autism Fact Sheet
- English/Spanish
- Other Languages
- Autism Specialist - ASD
- CAPTAIN Cadre
- CAPTAIN Leadership
- Autism Early
- ASD Teacher Institute
- ASDIT

**CAPTAIN Partners**

- Diagnose, Diagnose, CDE
- Family Resource Centers Network of California
- Center for Excellence for Developmental Disabilities at UC Davis MIREC Institute
- USC University Center for Excellence in Developmental Disabilities (USC EDCDD)
- California Department of Developmental Services

**CAPTAIN Summit**  
By invitation only  
Sept. - October 19-21, 2014  
Sept. - October 2-5, 2014

**Participated in summer intensive training activities**

**CAPTAIN**

www.captain.ca.gov

www.captain.ca.gov  
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# What You Will Learn

- Definitions and uses of positive, negative and token reinforcement
- Principles of effective reinforcement
- Steps for using reinforcement following the NPDC – ASD checklist

# 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!



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

Early Intervention (0-2)	Preschool (3-5)	Elementary (6-11)	Middle (12-14)	High (15-22)
Communication	Communication	Communication	Communication	Communication
	Adaptive	Adaptive	Adaptive	Adaptive
	Behavior	Behavior	Behavior	Behavior
	Social	Social	Social	Social
Joint Attention	Joint Attention			Joint Attention
	School Readiness	School Readiness	Vocational	Vocational
	Play	Play		Play
	Motor	Cognitive		
		Academic		

# 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

# Activity:

## 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.

# Activity: Answers

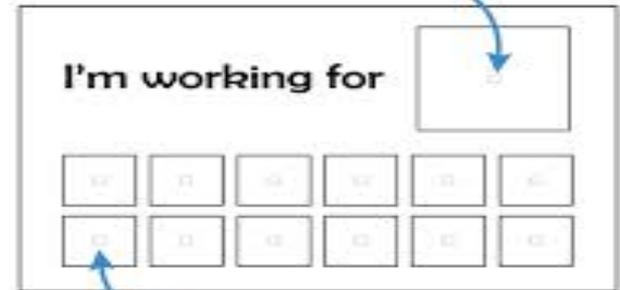
1. I am given to a student for being on task....
  - Positive Reinforcer
2. I am a job that is removed because the student did a great job on the first assignment
  - Negative Reinforcer
3. I am given to the student for getting all five answers correct.
  - Positive Reinforcer

# 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

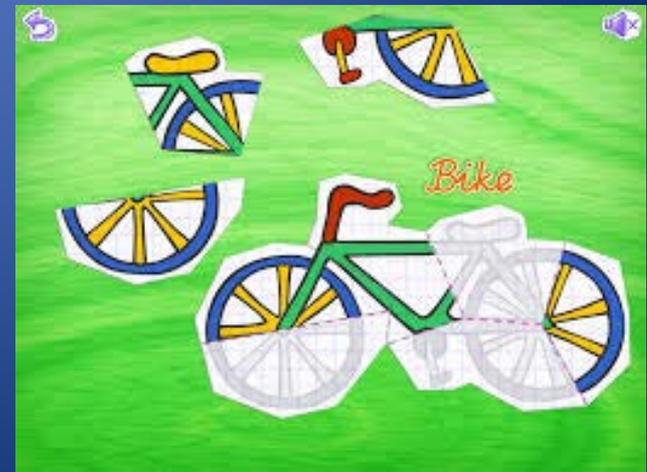
## One Example of a Token Economy

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



# Consider Developmental Level

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



# Types of Reinforcers

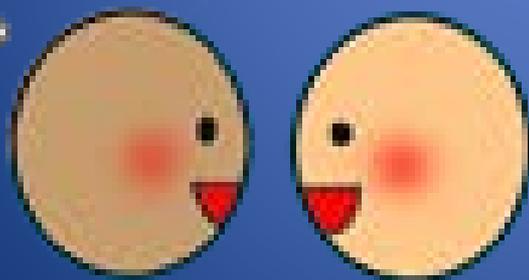
- Primary: Needs it for survival. Is reinforcing at a “biological” level.
  - Food, drink, physical contact, physical movement/sensory stimulation, warmth
- Secondary: Acquires value often by being paired with a primary.
  - Objects, social interactions, activities
- Token: A secondary reinforcer that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

# How Might Reinforcement Be Different for Those With ASD?

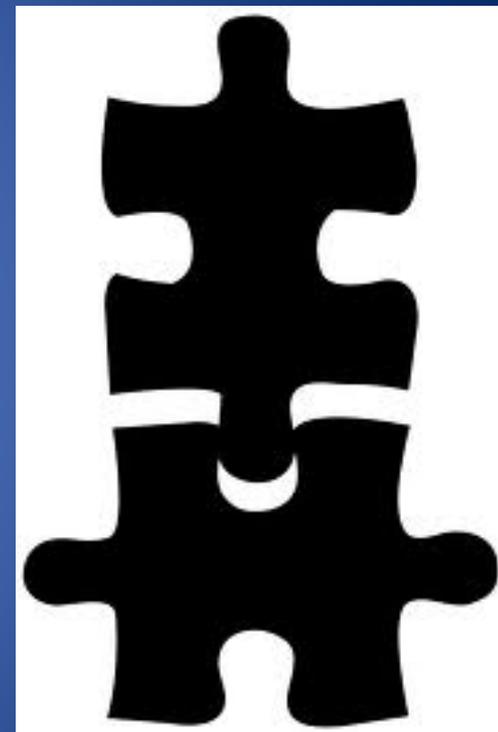
*Think*



*Pair*



*Share*



**CAPTAIN**

California Autism Professional Training  
and Information Network

# 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.

# Know the Principles of Reinforcement:

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



Autism Focused Intervention  
Resources & Modules

## Positive Reinforcer Selection Checklist

Learner's Name: \_\_\_\_\_

Age of Learner: \_\_\_\_\_

Target Skill or Behavior: \_\_\_\_\_

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?		

# Principles of Reinforcement: Contingent Rewards

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

# Principles of Reinforcement

- Pair other rewards with verbal and social praise
  - Pair a “Primary” with a “Secondary”

# Principles of Reinforcement

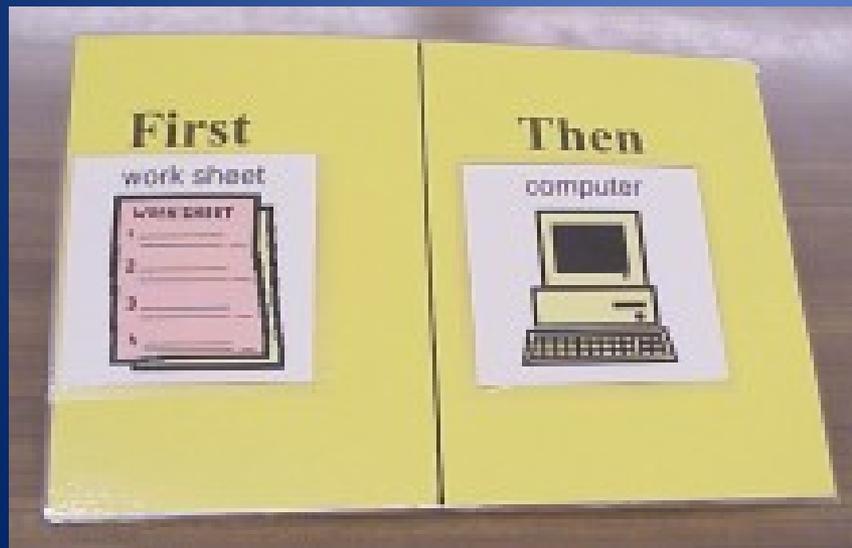
- Try to use naturally occurring rewards whenever possible
  - Use the schedule to your advantage
  - Have the outcome be it's own reward
  - Use student selected teaching materials

# Satiation vs. Deprivation

- 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

# Make it Visual

- Use Token Systems or First Then Systems



# Schedules of Reinforcement: Continuous vs. Intermittent

- Continuous Schedule of Reinforcement (CSR):
  - Used to strengthen behavior
  - While learning/teaching a new behavior
  - While developing unused behaviors
- Intermittent Schedule of Reinforcement (ISR):
  - Used to maintain established behaviors

# Interval vs. Ratio Schedule

- Interval relates to the amount of time the behavior, skill or absence of the behavior will occur
- Ratio relates to the number of times that the behavior or skill will occur

# Make a Skill or Behavior Stick!

- Thinning the reinforcement schedule:
  - Extend the schedule (Fixed Ratio -1 to FR-2 to FR-3)
  - Go from continuous to intermittent (FR-3 to Variable Ratio -3)
- Behaviors with a history of intermittent reinforcement are resistant to extinction

# Troubleshoot These.....

1. Student was working really hard for hot wheels, but by Wednesday was not working hard anymore...
2. 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
3. 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

# What is Differential Reinforcement?

- An application of reinforcement procedures
- Reinforcing a desired response while simultaneously ignoring or extinguishing an undesired response
- Often used to reduce the occurrence of interfering behaviors (e.g., tantrums, aggression, self-injury, stereotypic behavior) while promoting more desired behaviors (calm voice, using words or other functional communication)

# Shaping

- Reinforcing successive approximations toward a desired response
- Using differential reinforcement to increase a closer approximations while extinguishing all other responses
  - The best teachers know just when to time the reward
  - Reward what you want and ignore what you don't want

# DRO, DRA and DRI Schedules

- DRO – Differential Reinforcement of Other Behaviors
  - Reinforcing any other behavior than the targeted behavior during or at the end of an interval
- DRA – Differential Reinforcement of Alternative Behaviors
  - Reinforcing the functionally equivalent alternative behavior to the problematic behavior you are trying to decrease
- DRI – Differential Reinforcement of Incompatible Behaviors
  - Reinforcing a behavior that is incompatible with the target behavior

# Using Reinforcement:

## Basic Implementation Steps

1. Conduct preference assessments
2. Develop visual supports
3. Identify a skill/behavior to target and collect baseline data
4. Determine your target and your set performance criteria
5. Implement your reinforcement system and collect data
6. Evaluate data to determine effectiveness



# Complete Your Preference Assessments and Inventories

Reinforcement



## Positive Reinforcer Selection Checklist

Autism Focused Intervention  
Resources & Modules

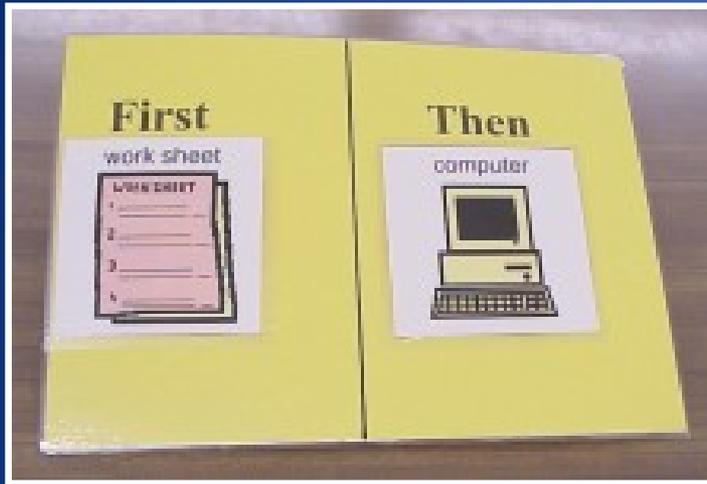
Learner's Name: \_\_\_\_\_

Age of Learner: \_\_\_\_\_

Target Skill or Behavior: \_\_\_\_\_

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?		

# Next Steps: Set Up Visual Reinforcement Systems



# Identify the Skill or Behavior

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



# Set Your Performance Criteria for Earning

- Determine the level of performance you will require for reinforcement to be earned
- Determine if you will be using a fixed or intermittent schedule
- Determine if you will be using a ratio or interval method
- 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---

Observation	1	2	3	4
Date				
Observer's Initials				
<b>Step 1: Planning</b>				
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				
<b>Step 2: Using</b>				
- 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				
<b>Step 3: Monitoring</b>				
3.1 Collect data on target behaviors				
3.2 Adjust reinforcement based on performance criteria				
3.2 Determine next steps based on learner progress				

Use the  
Implementation  
Checklist to  
Insure Fidelity  
Across  
Implementers

# Share Information With Families

**AFIRM** Autism Focused Intervention Resources & Modules

## 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

For more information visit:  
[www.afirm.fpg.unc.edu](http://www.afirm.fpg.unc.edu)

**AFIRM** Autism Focused Intervention Resources & Modules

<http://afirm.fpg.unc.edu/afirm-modules>



**AFIRM** Autism Focused Intervention  
Resources and Modules

# Self Study Using the Internet Modules



**AUTISM INTERNET MODULES**  
Linking research to real life.

<http://www.autisminternetmodules.org/>



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