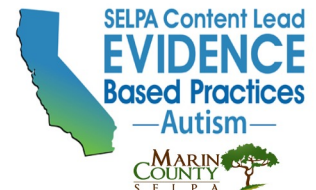# Evidence Based Practice Training:

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

www.captain.ca.gov

CAPTAIN
California Autism Professional Training and Information Network

SELPA Content Lead
EVIDENCE Based Practices
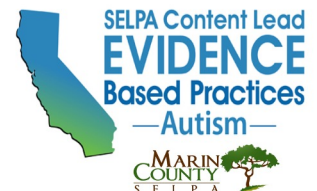—Autism—
MARIN COUNTY SELPA

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.
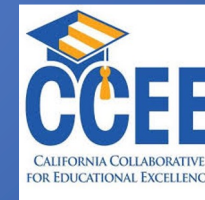
CAPTAIN
California Autism Professional
Training and Information Network

SELPA Content Lead
EVIDENCE
Based Practices
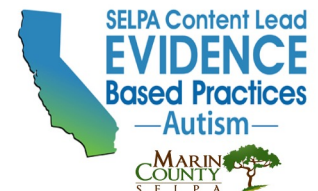—Autism—
MARIN
COUNTY
SELPA

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

Systems Support

Implementation Coaching

Workshop/ Training
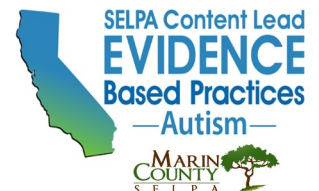
Information Session

Systems Support

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

CAPTAIN
California Autism Professional Training and Information Network

www.captain.ca.gov

SELPA Content Lead
EVIDENCE
Based Practices
—Autism—
MARIN COUNTY

Before We Begin…
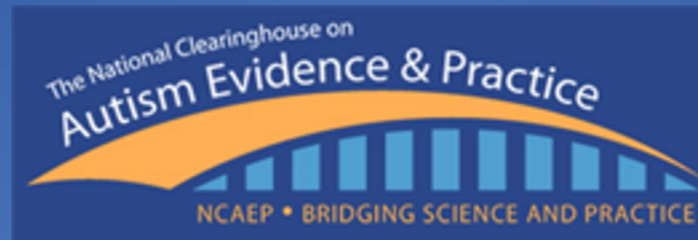
Please complete the **Pre Training Survey** sent to your email

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
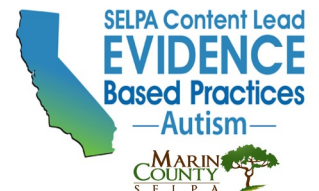
What are Evidence Based Practices?

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.

Evidence Based Practice Matrix (28 EBPs)

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

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

www.captain.ca.gov

Selecting an EBP Checklist

www.captain.ca.gov
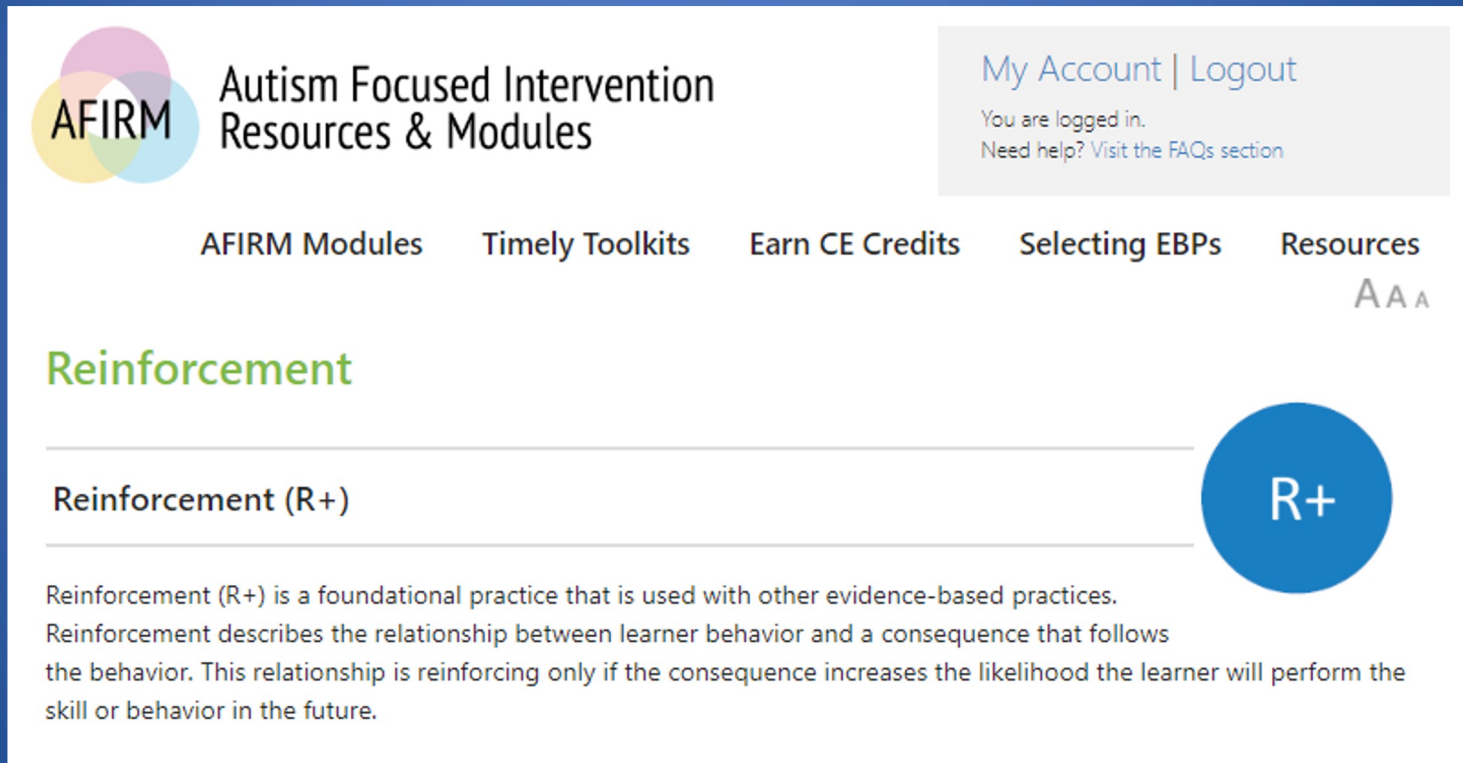
High Quality Training:
Autism Focused Intervention Resources and Modules (AFIRM)
Designed to help you learn the step-by-step process of planning for, using, and monitoring EBPs with learners with Autism from birth to 22 years of age

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 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						

(Steinbrenner, 2020)

www.captain.ca.gov

What is Reinforcement?

- Describes a relationship between a behavior and its consequences

- If a behavior <u>increases</u> in probability when a consequence is delivered, that consequence is considered a REINFORCER

Reinforcement

- Used to <u>increase</u> 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.
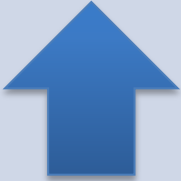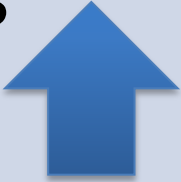
Select the goal that should not be addressed by using reinforcement:

- 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.

www.captain.ca.gov

CAPTAIN
California Autism Professional
Training and Information Network

SELPA Content Lead
EVIDENCE
Based Practices
—Autism—
MARIN
COUNTY

Positive and Negative Reinforcement

- **Positive** = adding something following the behavior that <u>increases</u> future probability of the behavior (e.g. giving a reward)

- **Negative** = removing something following the behavior that <u>increases</u> 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?

Let's Practice!

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.

www.captain.ca.gov

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?

Let's Practice!

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

CAPTAIN
California Autism Professional Training and Information Network

www.captain.ca.gov

SELPA Content Lead
EVIDENCE
Based Practices
—Autism—
MARIN COUNTY SELPA

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

www.captain.ca.gov

Let's Look at Different Types of Reinforcers

Tangibles

Interaction/Attention

Edibles/Consumables

Sensory or Automatic

Activities
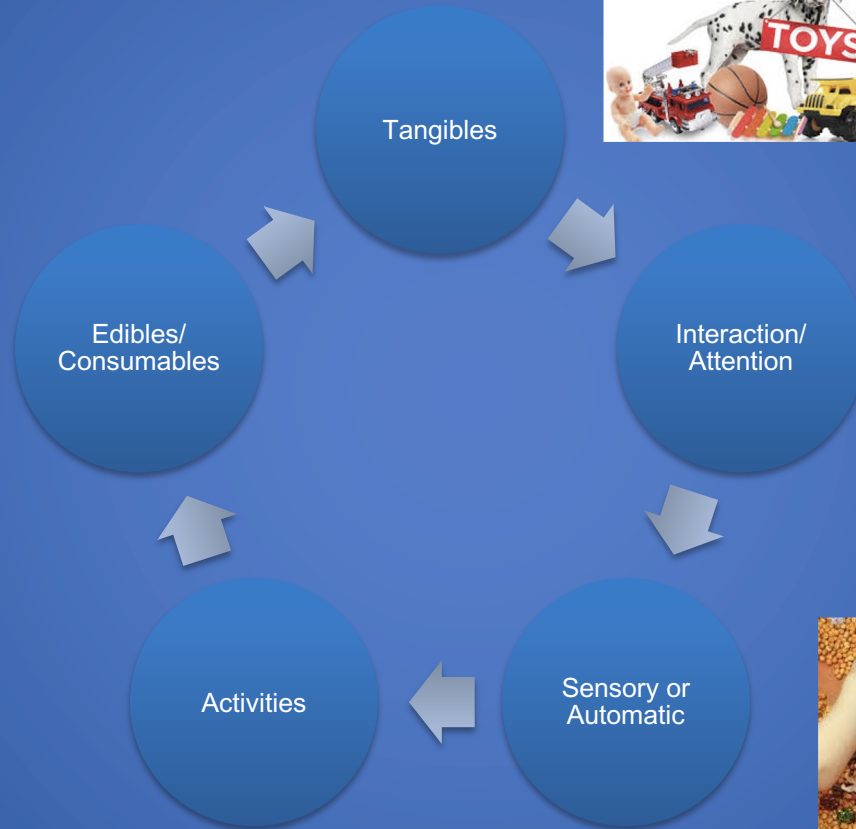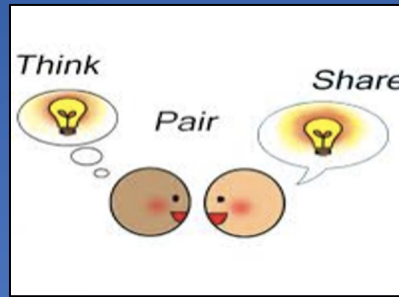
- How might reinforcement be different for those with autism?

- 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

I'm working for
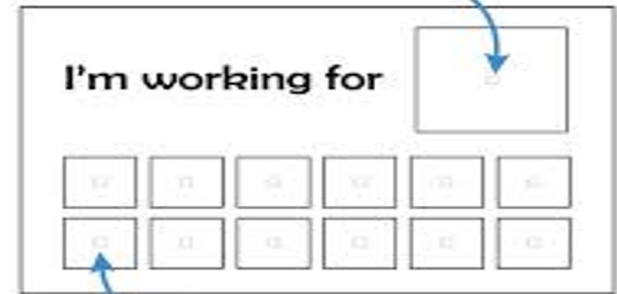
Earned tokens are placed into these spaces

= 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

Bike
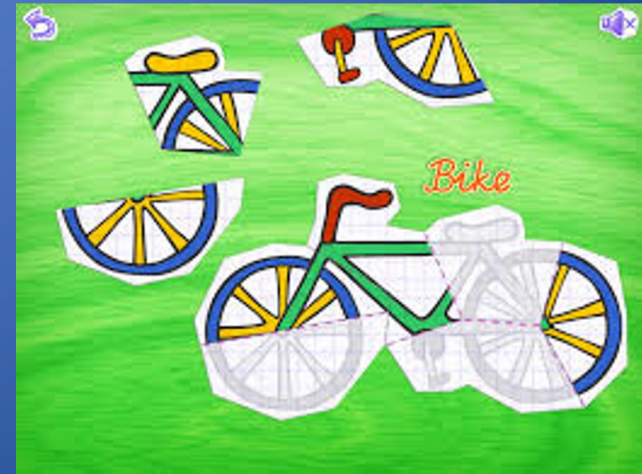
Tip: Consider Developmental Level

- 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

Reinforcement

AFIRM
Autism Focused Intervention Resources & Modules

---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?		

CAPTAIN
California Autism Professional Training and Information Network

www.captain.ca.gov

EVIDENCE Based Practices —Autism—
MARIN COUNTY SELPA

Practice with Feedback

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

CAPTAIN
California Autism Professional Training and Information Network

SELPA Content Lead
EVIDENCE Based Practices
—Autism—
MARIN COUNTY SELPA

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

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
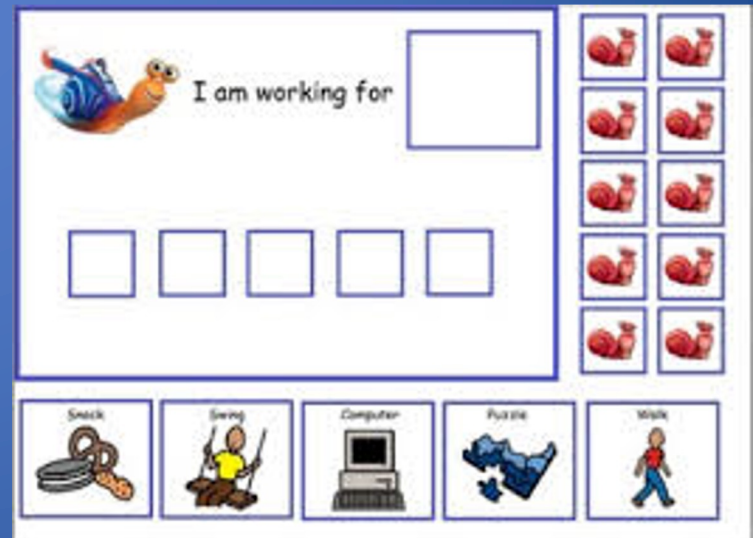
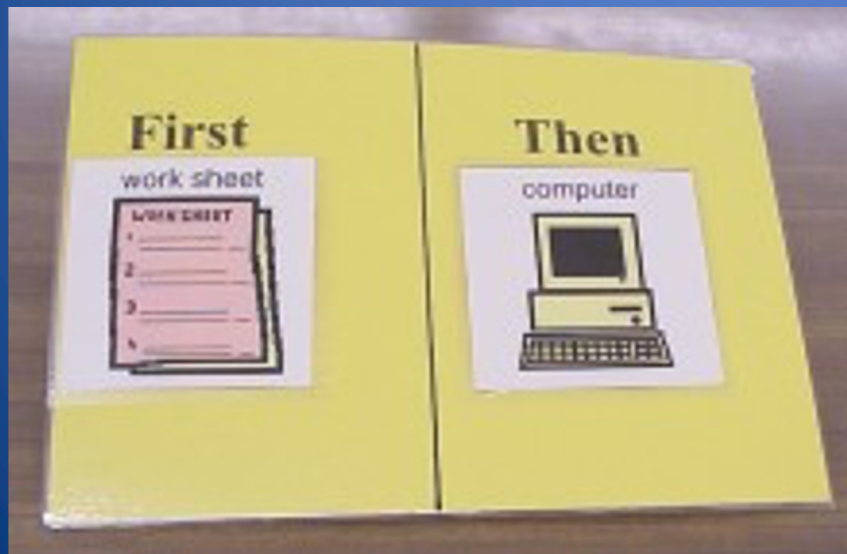# Principles of Effective Reinforcement

- 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

CAPTAIN
California Autism Professional
Training and Information Network

SELPA Content Lead
EVIDENCE
Based Practices
—Autism—

MARIN
COUNTY
SELPA

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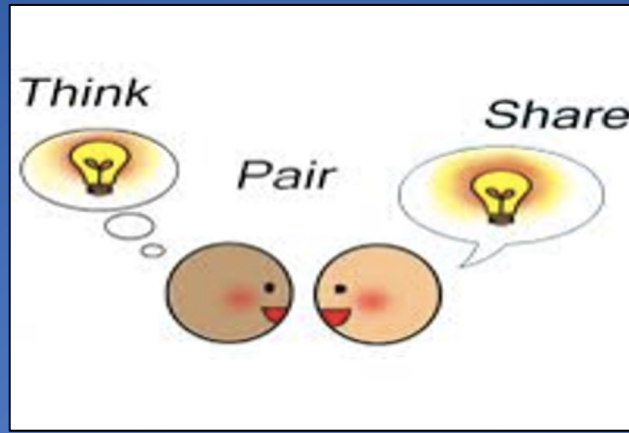
Why Can a Visual Representation Like Token System Be Helpful for Those With Autism?

www.captain.ca.gov

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

AFIRM — Autism Focused Intervention Resources and Modules

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

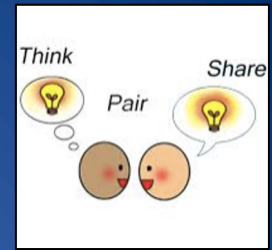- In other words…. They STICK!

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.

CAPTAIN
California Autism Professional
Training and Information Network

SELPA Content Lead
EVIDENCE
Based Practices
—Autism—
MARIN
COUNTY
SELPA

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:
☐ Positive: create a reinforcer menu and schedule
☐ Token economy: establish token economy system
☐ Negative: prepare pictorial, written, or verbal instructions

CAPTAIN
California Autism Professional
Training and Information Network

SELPA Content Lead
EVIDENCE
Based Practices
—Autism—
MARIN
COUNTY

Identify the Skill or Behavior

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

Baseline Data

www.captain.ca.gov

Set Your Performance Criteria for Earning

- Determine the level of performance you will require for reinforcement to be earn

- Fixed (every time) or intermittent (sometimes)

- Ratio (based on frequency) or interval (based on time)

Using Reinforcement

Step 2: Using
- **Positive Reinforcement:**
☐ Deliver reinforcement each time learner uses target skill/behavior
☐ Prevent satiation by varying reinforcers
☐ Thin reinforcers and use reinforcers consistently across settings
- **Token Economy:**
☐ Describe to learners components of token economy program
☐ Provide a token to learner each time skill/behavior is displayed
☐ Learners select reinforcement from the reinforcer menu
☐ Thin tokens and use tokens consistently across settings
- **Negative Reinforcement:**
☐ Cue learner to use target skill/behavior
☐ Remove negative reinforcer when target skill or behavior is used
☐ Transition to positive reinforcement

CAPTAIN
California Autism Professional Training and Information Network

SELPA Content Lead
EVIDENCE Based Practices
—Autism—
MARIN COUNTY SELPA

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

www.captain.ca.gov

CAPTAIN
California Autism Professional
Training and Information Network

SELPA Content Lead
EVIDENCE
Based Practices
—Autism—
MARIN
COUNTY
S E L P A
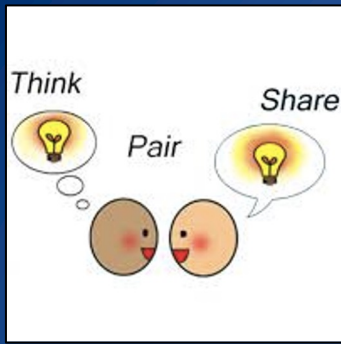
My Takeaways

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

www.captain.ca.gov

After the Training…

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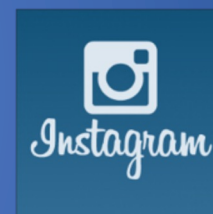**Post Training Survey**
that will be sent to your email
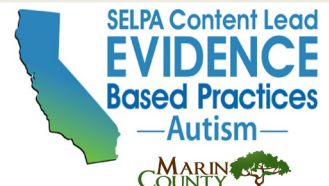
CAPTAIN

@CAPTAIN_EBPS

CAPTAIN_EBPS

CAPTAIN

www.captain.ca.gov
captain@marinschools.org