

Applied Behaviour Analysis Introductory Training Manual

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Professionalism and Confidentiality

Confidentiality

Information pertaining to the student, the student's program and/or the student's family may not be shared with people that are not employed by the family unless the family has given you explicit permission to do so.

- When in public and it is necessary to speak about the student, use his/her initials instead of names to protect their identity and maintain confidentiality.
- Use the initials of the student when sending email correspondence to those working with the student.
- The email address you use for work must be private (i.e. not shared with another person).
- Do not discuss one student when at another student's home.

A breach of confidentiality is a serious matter and may result in termination of your contract.

Professionalism

Tutors are expected to conduct themselves in a professional manner in all work environments, including the family's home and public locations.

Professional conduct includes but is not limited to the following:

- Limiting phone calls and text messages during sessions to subjects related to the student
- Appropriate interaction with the student's family
- Attending all scheduled shifts and team meetings. If you are unable to make a scheduled shift, please give the family as much notice as possible and help them to try to fill your shift. Make every effort to attend all team meetings, as these are scheduled in advance and input from all team members is required to ensure information is shared.
- Using professional language in session notes. Use concise, behaviour analytic terminology to describe student behaviour. For example, if the student was displaying challenging behaviours during a session, do not say the student was a 'brat' or that he had a 'bad day'. Instead, use objective, concise language to describe behaviour – e.g., 'Student attempted to hit tutor three times following the presentation of task XYZ. Student cried for 5 minutes and during that time was non-compliant with all tutor instructions.'
- If you have any concerns about the student's program or anything else related to your employment, please bring your concerns to the senior tutor or to the consultant. We want the tutors to be happy

Autism: A General Overview

Autism was first described by Dr. Leo Kanner in 1943.

According to the National ASD Surveillance System 2018 report:

- 1 in 54 children and youth between the ages of 5 and 17 years of age have been diagnosed with ASD
- 1 in 42 males, 1 in 165 females (4x more in males)

Diagnostic Criteria (DSM-V)

- Persistent deficits in social communication and social interaction across multiple contexts.
 - Deficits in social-emotional reciprocity (e.g., absence of normal back-and-forth conversation, reduced sharing of interests)
 - Deficits in nonverbal communicative behaviours used for social interactions
 - Deficits in developing, maintaining, and understanding relationships
- Restricted, repetitive patterns of behaviour, interests, or activities, as manifested by at least two of the following:
 - Stereotyped or repetitive motor movements, use of objects, or speech
 - Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or non-verbal behaviour
 - Highly restricted, fixated interests
 - Hyper- or hyporeactivity to sensory input or unusual interests in sensory aspects of the environment
- Symptoms must be present in the early developmental period
- Symptoms cause clinically significant impairment in occupational, or other important areas of current functioning
- Disturbances are not better explained by an intellectual disability or global developmental delay
- Levels 1, 2, 3 (requiring support, substantial support, very substantial support)

The cause of autism is still unknown, but extensive research has been conducted and is underway. Autism is a spectrum disorder. This means that ASD presents differently for every client.

***“If you’ve met one individual with autism, you’ve met one individual with autism”
– Stephen Shore***

Recent shifts:

- Previously, there was an almost exclusive focus on early intervention and treatment (e.g., a focus on 'losing the diagnosis').
- Now, the approach is more balanced:
 - Early identification and intervention are still important
 - The goal is not to 'eliminate' autism, but rather to support autistic individuals in living a rich life that serves their values
 - Autistic individuals have a right to the accommodations needed for them to access appropriate medical care, social support, education, employment opportunities and housing (and more!)
 - Society has a responsibility to accommodate the needs of those who are neurodiverse

ABA Therapy

The principles of Applied Behaviour Analysis are based on the assumption that all human behaviour is governed by its relationship to the environment – what consequences follow a particular behaviour determine the likelihood that that behaviour will occur in the future.

The principles of behaviour have been applied to improve socially meaningful behaviour in countless areas – developmental disabilities, mental illness, sports, medicine, recycling, safety training, organizational behaviour management, gerontology, and numerous other areas.

“Applied Behaviour Analysis is the science in which procedures derived from the principles of behaviour are systematically applied to improve socially significant behaviour to a meaningful degree and to demonstrate experimentally that the procedures employed were responsible for the improvement in behaviour” (Cooper, Heron, and Heward, 1987).

For over 30 years the principles of behaviour analysis have been used to support socially meaningful behaviour change in children and adults with autism, intellectual disabilities and other neurodevelopmental disorders through teaching new skills and treating challenging behaviours.

Today's ABA:

“Ours is not to dominate but to de-escalate or better yet prevent escalation in the first place. Ours is not to coerce but to listen, learn, guide, and coach. Ours is not to redirect, restrain, or merely manage and modify. Ours is to understand, share, and shape. Ours is to prioritize safety, rapport, and the televisibility of what we do above all else. We have proven that meaningful outcomes can follow when we prioritize these things.” (Hanley, 2021)

Selecting Goals for Intervention:

Goals for intervention are selected in collaboration with the client and their parents/caregivers. Target behaviours are selected for intervention based on a variety of factors. Some of these factors include:

- Is the change initiated by or important to the client?
- Does the behaviour or the outcome of the behaviour cause distress to the client?

- Does the change provide the client with access to additional environments?
- Does the change prevent self-injury or injury to others?
- Does the change reduce behaviours that interfere with learning? If so, have reasonable accommodations been made to make learning accessible yet?
- Does the change increase access to things that are important to the client (e.g., friendship)
- Does the change create a less restrictive environment for the client?

Behaviour Analytic Assessment and Teaching Strategies

A wide array of behaviour analytic teaching strategies have been derived from the basic principles of behaviour. Teaching strategies are selected for an individual learner based on many factors: the target skill being taught, the client's level of language comprehension and production, the client's ability to sit at a table and attend to stimuli, etc. Most often, a combination of teaching strategies will be used to teach each student. A selection of commonly used behaviour analytic teaching strategies follows below:

Discrete Trial Instruction (DTT)

- Discrete trial instruction is a method of teaching in which skills and concepts are broken down into their smallest component parts. Each component is taught utilizing the principles of stimulus discrimination, prompt fading and reinforcement. Each component part is practiced frequently until mastery is met.
- Once component parts are mastered at a set criterion level, they are combined into higher level skills or concepts with each skill building on previously learned skills.
- During DTT, tutors provide **clear** and **consistent** feedback about the student's responding.
- Using DTT has been empirically demonstrated to make significant improvement in children with ASD over the span of over 30 years (Lovaas, O.I., 1987; McEachin, JJ. & Lovaas, O.I., 1993; Eikeseth, S. et.al., 2002, Howard, J.S. et al, 2005, Sallows, G. & Graupner, T., 2005, Cohen, H., et.al., 2006; Rogers & Vismara, 2008; Leaf et al., 2016)

Natural Environment Teaching (NET)

- NET is a method of teaching that occurs in an environment that a child enjoys. The tutors will incorporate targets carefully in a play-based manner into activities that are interesting to the client. This can be motivating for the client but may also limit the stimuli that can be used in teaching due to a client's limited or restricted interests (Sundberg & Partington, 1999).
- Careful planning is required to capture targets in the natural environment
- Instruction may appear less structured than DTT.
- NET is built on four naturalistic methods: incidental teaching model, mand-model procedure, time-delay/delay-prompt procedure and milieu language teaching (Delprato, 2001; Peterson, 2004; Goldstein, 2002)
- Multiple studies have indicated that NET methods promote acquisition and generalization of language targets (Peterson), and may reduce behavioral disruptions compared to other teacher methods (Delprato, 2001).

Behavioural Skills Training (BST)

- BST has proven effective for teaching a variety of new skills to children and adults with varying diagnoses (Fleming, Oliver, & Bolton, 1996; Miltenberger, 2003; Kirkpatrick, Akers & Rivera, 2019)
- Involves 4 critical components: brief verbal or written instruction, modeling, rehearsal and role-play, and feedback (Miltenberger, 2003).
- BST has been successfully used to teach a variety of complex skills including conversation skills, greetings, giving compliments, taking turns, implementing picture exchange communication training, and is most often used in staff and parent training (Dogan et al., 2017; Leaf et al., 2015).

Functional Behaviour Assessment (FBA)

- FBA is a broad term referring to assessments done to determine the function of a behaviour
- Indirect FBA methods include interviews with parents/caregivers, self-reports, rating scales and checklists and record reviews
- Direct FBA methods involve observing the target behaviour and noting antecedents that precede it and consequences that follow it
- A functional assessment is complete when 3 outcomes have been achieved:
 - 1) The consultant has identified observable, measurable, and socially significant behaviours and operationally-defined those behaviours.
 - 2) The consultant has identified antecedents that reliably precede or “trigger” problem behaviour
 - 3) The consultant has developed a hypothesis about the relationship between the target behaviour and the environment (i.e., “why” the behaviour occurs), tested the hypothesis where necessary (e.g., via a functional analysis) and identified appropriate replacement behaviours to teach
- The following are tools commonly used when conducting a functional assessment:
 - Rating scales such as the Functional Analysis Screening Tool (Iwata & Roscoe, 2013) and the Questions About Behavioural Function questionnaire (Paclawskyj et al. 2000)
 - Narrative antecedent-behaviour-consequence (ABC) recording
 - Functional Analysis (Iwata et al., 1994; Iwata & Dozier, 2008)
 - Interview Informed Synthesized Contingency Analysis (Hanley, 2012 & Hanley et al., 2014);

Functional Communication Training (FCT)

- FCT teaches clients to communicate their needs and wants in an adaptive manner (e.g., verbal requests, picture-based communication, AAC communication, gestures) instead of engaging in dangerous, destructive, or disruptive problem behaviour
- FCT involves conducting a FBA to identify what is maintaining the problem behaviour, selecting a communication response, and using prompting, prompt-fading, and differential reinforcement to teach that communication response (Tiger, Hanley & Bruzek 2008).
- Over 30 years of research has demonstrated the effectiveness of FCT. FCT is the most widely published function-based treatment for problem behaviour (Tiger, Hanley & Bruzek, 2008; Carr & Durrand, 1985)

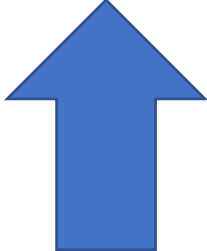
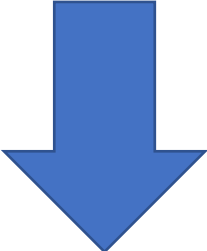
Basic Principles – Operant Behaviour

Operant Behaviour includes any behaviour whose probability of occurrence is determined by its history of consequences. Consequences may include:

- Reinforcement
- Punishment

Reinforcement: Reinforcement is a change in the environment (addition or removal of a stimulus) dependent on (or contingent on) the occurrence of a specific behaviour, that results in an increase in that behaviour in the future.

Punishment: Punishment is a change in the environment (addition or removal of a stimulus) dependent on (or contingent on) the occurrence of a specific behaviour, that results in a decrease in that behaviour in the future.

Reinforcement	
Punishment	

Basic Principles - Reinforcement

Reinforcement: Reinforcement is a change in the environment (addition or removal of a stimulus) dependent on (or contingent on) the occurrence of a specific behaviour, that results in an increase in that behaviour in the future.

There are two types of reinforcement: positive and negative.

- *Positive Reinforcement* occurs when a stimulus is added, dependent on the occurrence of a particular behaviour and the frequency of that behaviour increases in the future.
- *Negative Reinforcement* occurs when a stimulus is removed dependent on the occurrence of a particular behaviour and the frequency of that behaviour increases in the future.
- A *Reinforcer* is the stimulus (item) that is presented or removed after a correct response.

There are two categories of reinforcers that can be used:

- A *Primary reinforcer* is a stimulus whose reinforcing properties are unlearned. Primary reinforcers are inherently reinforcing, and are stimuli related to survival such as water, food, sleep.
 - Examples include a skittle, or a sip of juice.
- A *Secondary reinforcer* is a stimulus whose reinforcing properties are dependent on learning. Secondary reinforcers acquire their reinforcing properties through repeated pairings with primary reinforcers.
 - Examples include verbal praise, a high five, a hug, or access to a toy.

Selecting reinforcers:

- **Ask** the student, parents, or other caregivers what the student's favorite foods, toys and activities are.
- **Observe** the student – what does the student gravitate towards on their own?
- **Assess** the student – perform a series of “mini” preference assessments. Provide the student with 5-8 items to choose from. Do this several times and observe what items they choose. This assessment will provide an indication of what items could be effective reinforcers.

Basic Principles - Reinforcement Schedules

Reinforcement schedules describe how often a “correct” response will result in reinforcement.

The Continuum:



Continuous reinforcement: Every response meeting correct response criterion results in reinforcement.

- Used when establishing new behaviours
 - E.g., A new target in gross motor imitation has just been introduced: A CRF of edible/tangible reinforcers may be used (in addition to praise).
- Used for low frequency behaviours
 - E.g., A student rarely initiates conversation with a peer: Every single initiation results in a point on their token economy.
 - E.g., A student rarely independently requests a break, so every time they request a break independently, they are provided with access to it.
 - E.g., A student rarely makes a vocalization to request a preferred toy ◇ Every vocalization occurring in the presence of that toy and a verbal model of the word results in access to the toy.

Intermittent reinforcement: Some, but not all responses meeting correct response criterion result in reinforcement.

- Used to maintain and generalize previously learned behaviours.
 - E.g., Sitting nicely: A student is now able to sit nicely at their desk at school independently. Verbal praise may be provided intermittently only.
 - E.g., Commenting: A student now comments with a high frequency about ongoing activities. Comments will now only intermittently result in points or tokens.

Reinforcement Schedules

The Goal: To progress gradually and systematically towards naturally occurring types and levels of reinforcement.

- Thinning of continuous reinforcement schedules through the use of intermittent schedules is often needed to accomplish this goal.

Types of reinforcement schedules:

1. Fixed ratio (FR) schedule
2. Variable ratio (VR) schedule
3. Fixed interval (FI) schedule
4. Variable interval (VI) schedule

Fixed Ratio Schedule: A schedule in which reinforcement is delivered after a set number of responses.

- FR1 = Every CR results in reinforcement
- FR2 = Every 2nd CR results in reinforcement
- FR5 = Every 5th CR results in reinforcement

Variable Ratio Schedule: A schedule in which reinforcement is delivered after a variable number of responses.

- E.g. VR 2: On average, every 2nd CR results in reinforcement.
- Applied: Deliver a reinforcer following every 1st, 2nd or 3rd CR (vary between these).

Ratio Schedule Example: If the ratio requirement is to complete 10 correct math problems before accessing reinforcement (FR10), the student will receive a reinforcer immediately after he or she has completed the 10th correct math problem.

Fixed Interval Schedule: Reinforcement is delivered following the first CR after a specified interval of time has elapsed. The time interval remains constant.

- E.g. FI 1-minute = The first CR that occurs after 1-minute has elapsed results in reinforcement.

Variable Interval (VI) schedule: The first CR following a variable interval of time results in reinforcement.

- E.g. VI 2-minute: The first response after (on average) 2-minutes has elapsed results in reinforcement. Actual intervals may be 1 minute, 3 minutes etc.

Interval Schedule example: If the interval requirement is VI 1-minute for raising hands to ask questions in class:

- The student raises her hand and asks a question.
- The student may raise her hand 5 times in the next minute, but those responses will not be reinforced.
- Only the first time she raises her hand AFTER one minute has passed will result in the teacher calling on her to answer the question.

Schedule Thinning: The process by which the schedule of reinforcement is gradually and systematically thinned (making reinforcement less frequent) based on an ongoing assessment of client responding.

E.g. CRF → VR2 → VR3 → VR4

Basic Principles - Motivating Operations

A Motivating Operation (MO) is an environmental variable that :

- a) Increases or decreases the reinforcing effectiveness of a stimulus, object or event, and
- b) Increases or decrease the current frequency of the behaviour that was reinforced by the stimulus, object or event.

Motivating operations take two forms: **Establishing Operations (EOs)** and **Abolishing Operations (AOs)**.

An Establishing Operation (EO) is an MO that **increases** the current effectiveness of a reinforcer.

- During deprivation, a reinforcing stimulus that has been under deprivation becomes a more effective reinforcer.
 - For example, putting a toy on the top shelf acts as an EO for the student to ask to play with the toy.

An Abolishing Operation (AO) is an MO that **decreases** the current effectiveness of a reinforcer.

- During satiation, a student has received too much of a particular reinforcer and the effectiveness of that reinforcer is reduced.
 - For example, after a student has just finished eating an ice cream, ice-cream will be a less effective reinforcer than before the student started eating.

The Discrete Trial

Antecedent → *Behaviour* → *Consequence*

A discrete trial (e.g., a Learn Unit, three-term contingency) is the teaching methodology we use to teach new behaviours. It has three components: an antecedent, a behaviour and a consequence that occur in succession. This is sometimes referred to as “the loop.” During each trial, “the loop” is completed one time. The Components of a trial include:

- the teachers antecedent
- the student’s behaviour
- the consequence delivered by the teacher (correction or reinforcement)
- motivating operations
- setting events in the students instructional history (Greer, 2002).

Stimulus Control

When a response is reinforced, stimuli that immediately precede that response acquire some control over the reoccurrence of the response. The stimulus that immediately precedes a reinforced response is called a discriminative stimulus (S^D). A behaviour is said to be under **stimulus control** if it meets three conditions:

1. It occurs immediately following the S^D
2. It only occurs when preceded by the correct S^D
3. It does not occur in the presence of other S^D s

Antecedent

The antecedent is the first component in a trial and occurs immediately before the behaviour. This is also referred to as a **discriminative stimulus** or S^D (Stimulus, discriminative).

A **discriminative stimulus** is a stimulus that signals that a particular consequence will occur following a certain behaviour.

- In its presence, that behaviour results in reinforcement
- In its absence, it does not.
- In a trial, the discriminative stimulus signals to the student that if they respond in a certain way, reinforcement will follow.

The antecedent is an instruction given to the student (“Touch head”). If the student engages in a specific behaviour (touches their head), reinforcement (“Way to go, that’s your head!”) will follow. If the student touches their head in the absence of the instruction, reinforcement is unlikely to follow.

Guidelines for presenting antecedents:

- Guidelines for presenting antecedents will vary by client based on the client’s ability to attend to important stimuli, their receptive language skills, and their ability to generalize skills across materials, environments, and people
- It is essential to work closely with your consultant to ensure you deliver antecedents appropriately for your client

General Guidelines for Presenting Antecedents to Early Learners:

- Ensure the student is attending before issuing an antecedent.
- Ensure the student is oriented towards you, and is not engaging in any other behaviours when you give an S^D .
- Antecedents must be presented exactly as written in the written program directions (e.g., the short-term objective)
- Do not add any extraneous language to the S^D .
 - Good: “Sit down”
 - Not so good: “Jimmy, come on over here and have a seat please.”
- Issue antecedents in a clear, neutral voice tone.

- Antecedents should be presented in a voice tone slightly higher than normal speaking tone without any inflection (voice tone should not rise at the end of the S^D as in a question)
- Avoid repeatedly using the client's name immediately prior to presenting the S^D

General Guidelines for Advanced Learners:

- Ensure the student is attending before presenting the antecedent
- Vary the language and voice tone used when presenting the antecedent. Typically, this is described as a "generalized antecedent" in the written program directions.
 - For example, the BI might deliver an antecedent to come sit down at a table in any of the following manners: "come sit please", "come over and sit down", "sit over here", "take a seat", etc.
- The tone of voice can be naturalized to reflect what the instruction will sound like in the generalized environment

Behaviour

- Behaviour includes any movement or action a person engages in. It includes both behaviours that are considered problematic, but also encompasses all other responses such as saying "Can I have a drink?" tapping a foot, pointing, or crying. In a discrete trial the behaviour is whatever the student does immediately following the antecedent.

Guidelines for observing and recording behaviour:

- The team must be **consistent** in what they accept as a correct response. If there are any deviations from the defined correct response, the student will be confused, and will have additional challenges learning.
- **Response latency** refers to the time between the end of an SD (antecedent) and the onset of the student's response.
 - Response latency should be **no longer than 3 seconds** (unless otherwise specified by the consultant).

Consequence

- The consequence is a change in the environment that occurs as a result of a behaviour. This consequence can be either the addition of a stimulus, or the removal of an already-present stimulus. In a trial, the consequence is almost always the addition of a stimulus. The stimulus that is added is dependent on the behaviour that was demonstrated.
- **Correction Procedure:** When a student responds incorrectly, a correction is delivered. The specific correction will be scripted in the current program description. However, corrections generally involve the following steps:
 1. Re-present the antecedent.
 2. Deliver a prompt to assist the student to respond correctly.
 3. The student must participate in the correction (follow the prompt delivered).
 4. Do not provide reinforcement following a correction – instead, present a new trial

- **Reinforcement:** In a trial, a correct response results in reinforcement. Reinforcement is a change in the environment (addition or removal of a stimulus) dependent on (or contingent on) the occurrence of a specific behaviour, that results in an increase in that behaviour in the future.
 - Reinforcement procedures will be scripted for each program, including the type of reinforcement (E.g. social praise, verbal praise, tangible, primary etc.) and schedule of reinforcement (E.g. FR1, VR2 etc.).
- **Differential Reinforcement:** The delivery of reinforcement by which a specific behaviour is followed by a reinforcer, but other behaviours are not. Used to refine the topography, frequency, or duration of existing behaviours.

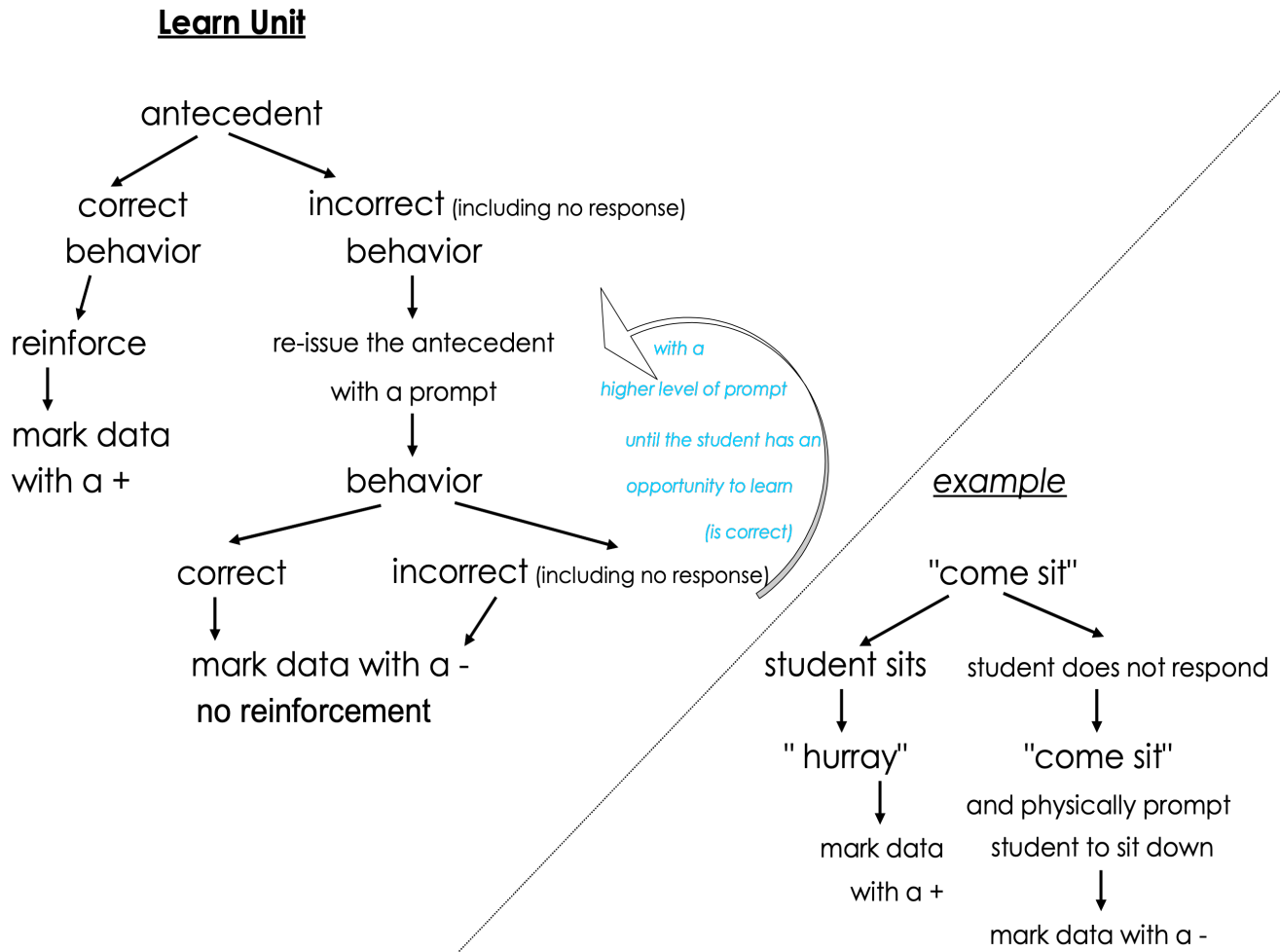
Guidelines for Reinforcement

- The ideal frequency, timing, and quality of reinforcement varies greatly between clients. It's essential to collaborate with your consultant to know what schedule of reinforcement is appropriate for your client. Reinforcement may also vary based on the difficulty of a program.

In general:

- Reinforcement must be **immediate**. Present the reinforcer immediately following a correct response.
- Reinforcement must be **contingent**.
 - The reinforcer must be presented contingent on a correct response. When a correct response occurs, a reinforcer follows, when an incorrect response occurs, reinforcement does not follow.
 - The team must be consistent in what is an acceptable correct response.
- The **Magnitude** of the reinforcer must match the difficulty of the response. Would you do something that was very difficult, that you didn't enjoy doing if all that followed was "good job"?
- The reinforcer must be preferred for the student! If the student does not like hugs and tickles, then hugs and tickles will not be effective reinforcers!
- Use **Variable** reinforcement, to avoid satiation.
 - Vary reinforcers every couple of trials.
- Use **Differential reinforcement**.
- Always pair primary reinforcers with secondary reinforcers (provide praise or a high five along with an edible).
- **Use positive reinforcement** rather than negative reinforcement whenever possible.
- Restrict access to reinforcers outside of the teaching environment, to avoid satiation and to create establishing operations.
- Reinforcement should be **age-appropriate**.
- Always have a back up plan – if the student is not interested in a reinforcer you present, have something else ready to go for the next trial.

Example of a Discrete Trial



Prompting and Prompt-Fading

Tactic/Prompt: Helps the client achieve the correct response. The least intrusive prompts should be applied and should be faded as soon as possible.

Tactics may include but are not limited to: Physical prompting, Modelling, positional prompts, gestural prompts, visual prompts, verbal prompts, echoic prompts, inflection prompts, latency prompts, recency prompts, within stimulus prompts.

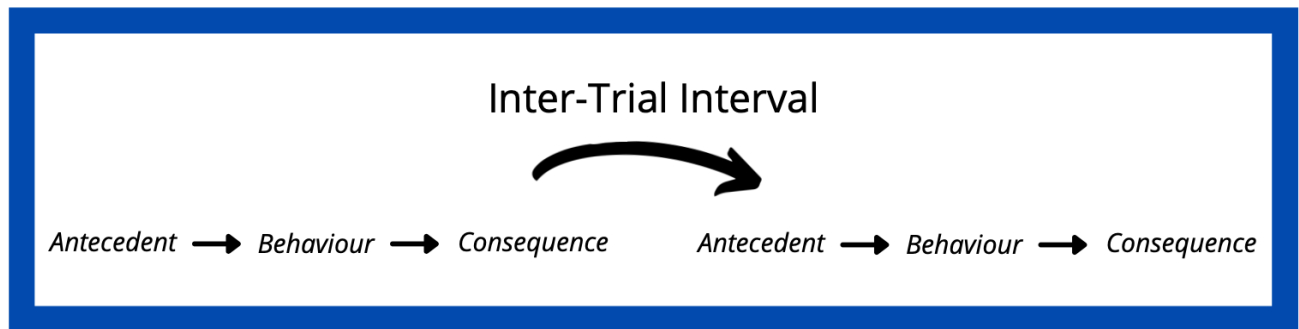
Prompt-fading: Systematically and incrementally removing previously provided prompts until the student responds independently. Below is a description of the most frequently used prompt-fading methods (this is not an exhaustive list).

- *Prompt Hierarchy*: A prompt hierarchy consists of a list of prompting levels arranged from least to most or most to least intrusive.
- *Most-to Least Prompt-Fading*: Systematically reducing the intrusiveness of a prompt until it is no longer presented.
- *Time-Delay Prompt-Fading*: Systematically increasing the delay between when the antecedent is presented and when a prompt is delivered.
- *Stimulus Fading*: Systematically fading (reducing the intrusiveness) of a within-stimulus prompt.

Inadvertent Prompts: Tutor inadvertently provides the student with a prompt to help them obtain a correct response.

- Mouthing the verbal response
- Providing reinforcement before the response is fully completed
- Gesturing
- Looking at the correct response in the field
- Placing the target response stimuli last in the field
- Making sure the target response stimuli is positioned perfectly after the field is presented
- Presenting stimuli in a pattern

Inter Trial Interval1



Inter-Trial Interval (ITI): The length of time between the end of the consequence and the next antecedent. The ideal ITI is 2 to 3 seconds. This duration of ITI maintains motivation and reduces opportunity for loss of attention or interfering behaviours, The length of the ITI can be adjusted by your consultant depending on the client's learning needs.

Data Collection

Trial by trial Data Collection: Record data for each trial immediately after the consequence has been delivered to the student.

Antecedent → *Behaviour* → *Consequence* → *Data Point*

- Record a (+) on the data sheet for each correct response.
- Record a (-) on the data sheet for each incorrect response.
- Place a data point on the graph at the intersection of the x and y axis. Connect data points to make data paths, using a straight edge.

Event Recording: To take event recording data, record the number of events that occur per session using tally marks.

- One tally mark is recorded per event of the behaviour.
- Graph total events of target behaviour per session.

ABC (Antecedent-Behaviour-Consequence) Data: Record the target behaviour, the events/stimulus changes that immediately preceded the behaviour (antecedents) and immediately followed the behaviour (consequences) on an anecdotal ABC data collection chart.

Decision Making: Follow the guidelines in Data Analysis and Decision Making (Greer, 2002; Keohane, 1997).

Steps to Running a Program

- 1) Read the current STO for the program.
- 2) Know the correct response definition, the antecedent and any tactics employed in the current STO.
- 3) Set up any materials required (i.e. datasheet close by, picture stimuli, reinforcers, or a pen)
- 4) Bring the client to the table
- 5) Place the stimuli on the table (if required for the program)
- 6) Present the antecedent and current level of prompting.
- 7) Wait for the client's response
- 8) Provide a consequence (i.e. reinforcement or correction procedure)
- 9) Record your data on the datasheet
- 10) Clear the field by removing all the stimuli on the table
- 11) Redo steps 5 to 10 for the remaining trials

Generalization and Maintenance

Generalization is the process wherein a skill learned in one situation is generalized to help the client be able to engage in the skill with different stimuli, antecedents, people, and environments and when the schedule of reinforcement approximates that available in the natural environment. Generalization must be programmed for! Once the long-term objective for a program has been met, that program will either be incorporated into another, higher level program (in the case of early learner programs) or a new long-term objective specifically designed to target maintenance and/or generalization of the learned skill will be scripted. For many students, generalization will need to be programmed across the following stimulus properties:

- varied stimuli
- varied antecedents
- varied locations
- varied people

Addressing Excess Behaviours

What are excess behaviours?

- Behaviours that occur too frequently, or with too great a magnitude.
- Behaviours that are not functional for the student, **and** impede learning, social interactions, or independence.

Behaviour is Communication

- **All** excess behaviour serves as communication. It is your consultant's job to discover what is being communicated. This is done through a functional behaviour assessment. Once the function or communicative intent of a behaviour is identified, a consultant will (a) ensure any accommodations that can be made for the client have been made, (b) ensure that those around the client reinforce/respond to functional, non-dangerous communication bids appropriately (e.g., handing the client a toy when the client points to it), and develop programming to teach the client the skills needed to communicate their wants and needs.
- **Functional Communication Training (FCT)** is a behavioural teaching strategy where an appropriate form of communication is taught to replace dangerous, disruptive, or difficult to understand forms of communication. For example: Teaching a client to say "I need a break" or to sign, 'break' rather than ripping up their math worksheet.

There are four common functions of excessive behaviours:

1. Escape – the student engages in the behaviour because in the past because something in the environment is aversive for them and the behaviour has resulted in the termination of a non-preferred task or environment in the past (negative reinforcement).
2. Attention – the student engages in the behaviour because there is a lack of quality attention and in the past the behaviour has resulted in attention from others (positive reinforcement)
3. Automatic – the student engages in the behaviour because it results in some type of reinforcing sensation or stimulation (positive or negative reinforcement)
4. Access to tangible items – the student engages in the behaviour because in the past, this resulted in access to a preferred tangible item (positive reinforcement).

In many cases several behaviours serve the same function; when a group of topographically dissimilar behaviours serve the same function, they are referred to as a 'response class'. Additionally, one behaviour or class of behaviours may serve more than one function.

When designing behavioural interventions, we focus on:

- Identifying the function of the behaviour. Said another way, we aim to understand what the client is trying to communicate. To do this we look at the antecedents and consequences of the behaviour.
- When the function or purpose of the behaviour has been identified, we will modify the environment and/or make accommodations to facilitate the client's success (e.g., reduce the number of math problems presented at one time, increase prompting/support to complete a task, provide frequent breaks and high quality, preferred attention and social interactions, offer choices, etc.).
- Then, we will use a skills-based approach to teach the client the needed skills to communicate their wants and needs without engaging in challenging behaviour.

Who designs behavioural interventions?

- **Your consultant!**
- Behaviour interventionists are not permitted to design behavioural interventions or modify existing interventions.
- Behavioural interventions must be implemented **consistently**. If they are not, the behaviour will not decrease, and could potentially become much more problematic. The behavioural intervention will become polluted and unusable.
- Behavioural interventions often take time to "work." They must be implemented consistently over time before we can determine their effectiveness.
- Decisions about intervention modification are based on **data**. Therefore it is essential that BI's take accurate behaviour data.
- Behaviours often get worse before they get better. This is referred to as an extinction burst.

Goals/Priorities When Responding to Problem Behaviour:

- **The safety of both the client and the teacher should always be the top priority. If problem behaviour appears dangerous or is likely to escalate to a dangerous level, prioritize safety above all else, even if this means reinforcing problem behaviour.**

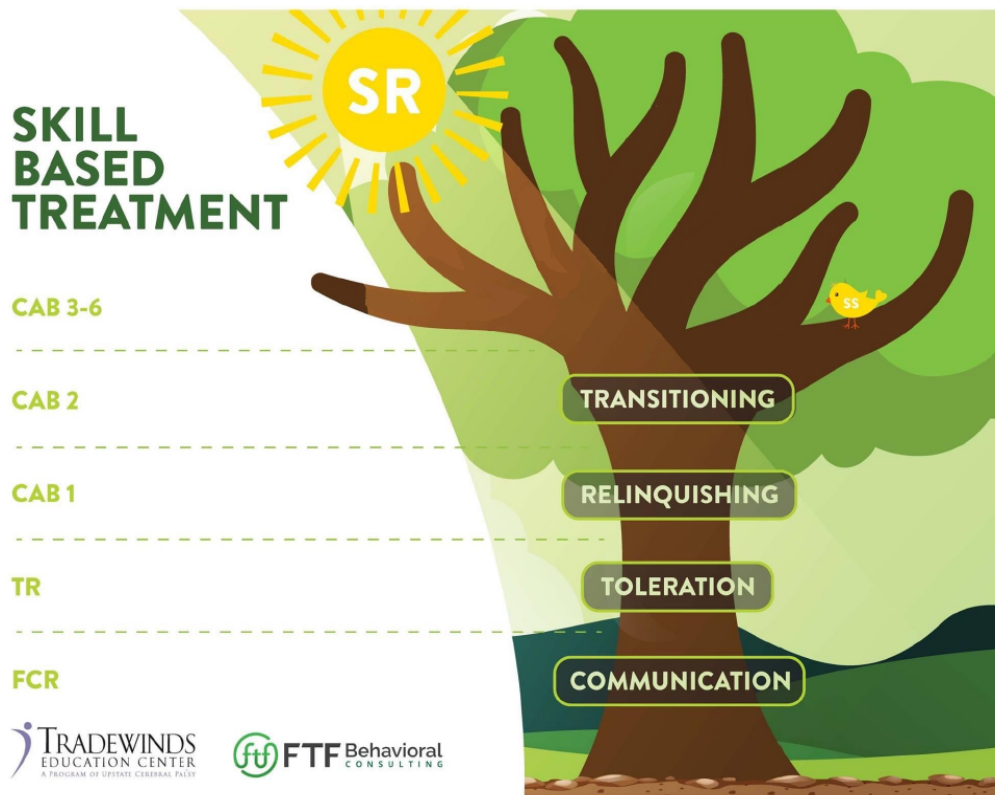
First steps – what to do if a novel excessive behaviour occurs:

- Empathize with your client using a calm demeanor.
 - Example: "I know this is hard" "It's frustrating when XYZ happens"
- Avoid a big reaction, avoid directly talking the problem behaviour (i.e. You hit me hard!), Stay calm and collected
- Attempt Redirection - Continue with the activity that the student is involved in when the behaviour occurred by providing a simple instruction to engage in an incompatible behaviour
- If redirection is unsuccessful, set-up the environment to establish a 'happy, relaxed, and engaged' state for your client.
- Record the following in ABC data or team notes:
 - Description of the behaviour

- Frequency of the behaviour (how many times did it occur).
- What occurred immediately prior to the behaviour
- What occurred immediately after the behaviour
- Alert your consultant and provide the information recorded concerning the new behaviour.

Skills Based Treatment (SBT)

- SBT is a treatment for excess behaviour that consists of systematically teaching communication, tolerance for frustration, and a range of contextually appropriate behaviours (CABs)



- Common CABs include relinquishing favorite items, transitioning to a workspace, completing academic work, playing independently, playing according to rules of a game, completing chores, or completing self-care tasks.
- The overall goal of SBT: teach client’s how to behave safely and productively in spite of normal unpredictability and disappointments of everyday life, while building strong and trusting relationships between client’s and caregivers

Glossary of Basic Terminology

Abolishing Operation: Is an MO that decreases the current effectiveness of a reinforcer or punisher.

Antecedent: What happens immediately before the target behaviour or client response. In a discrete trial this is the discriminative stimulus.

Applied Behaviour Analysis: “is the science in which procedures derived from the principles of behaviour are systematically applied to improve socially significant behaviour to a meaningful degree and to demonstrate experimentally that the procedures employed were responsible for the improvement in behaviour” (Cooper, Heron, and Heward, 1987).

Consequence: What happens immediately following the target behaviour or client response.

Continuous reinforcement schedule (CRF): Every response meeting correct response criterion results in delivery of a reinforcer.

Differential reinforcement: providing a lower level of reinforcement for a skill that is completed with high effort but not quite correct, providing a higher level reinforcement for a skill that is completed with high effort and performed better than normal, or providing a lower level of reinforcement for known items and a higher reinforcer for target items.

Discriminative Stimulus (SD): An SD signals that a particular consequence will occur following a certain behaviour. In it's presence, that behaviour results in reinforcement. In it's absence, it does not.

DRO (Differential Reinforcement of Other Behaviour): Reinforcement of other behaviours except the target behaviour that is trying to be decreased.

DRI (Differential Reinforcement of Incompatible Behaviour): Reinforcement contingent with behaviours incompatible with the target behaviour (i.e. placing their hands in their pockets instead of hand flapping).

DRL (Differential Reinforcement of Lower Rates of Behaviour): Reinforcement for behaviours occurring at a lower rate (i.e. calming down after a 2 minute tantrum versus their normal 20 minute tantrum).

DRA (Differential Reinforcement of Alternative Behaviour): Reinforcement contingent on desirable behaviours that occur instead of undesirable behaviours (i.e. asking for help instead of throwing themselves on the ground).

Establishing Operation: is an MO that **increases** the current effectiveness of a reinforcer.

Extinction: Removal of reinforcers or consequences for the target behaviour (ignore the behaviour and provide no reaction). Extinction is used to decrease the frequency of undesired behaviours.

Extinction burst: an increase in the target behaviour while extinction is initially applied.

Field: what is visually presented to the child. This field may be in isolation (only one item), a F02 (two items on the table), or a F03 (three items on the table).

Fixed interval (FI) schedule: Reinforcement is delivered following the first CR after a specified interval of time has elapsed. The time interval remains constant.

Fixed Ratio (FR) schedule: Every specified number of correct responses (CRs) results in reinforcement

Intermittent Reinforcement schedule: Some, but not all responses results in delivery of a reinforcer.

Inter-Trial Interval: Pause between trials generally 3 – 5 seconds.

Known Distracters: items that are presented to the child in the field that can be randomly rotated with the target which make the child discriminate the target from the known items.

Trial / Learn Unit: is the teaching methodology we use to teach new behaviours. It has three components: an antecedent, a behaviour and a consequence that occur in succession. The Components of a trial include: (a) the teachers antecedent (b) the student's behaviour (c) the consequence delivered by the teacher (correction or reinforcement) (d) motivating operations (e) setting events in the students instructional history (Greer, 2002).

Mastered Items: stimuli items that have met the mastery criteria for a program.

Mastery Criteria (MC): Percentage that the target needs to reach before the target can be considered mastered.

Motivating Operation (MO): an environmental variable that: (a) Increases or decreases the reinforcing effectiveness of a stimulus, object or event, and (b) Increases or decrease the current frequency of the behaviour that was reinforced by the stimulus, object or event.

Negative Punishment: The removal of a stimulus following a response that decreases the likelihood that the behaviour will occur again in the future.

Negative Reinforcement: The removal of a stimuli following a response that increases the likelihood that the behaviour will occur again in the future.

Positive Punishment: The addition of a stimulus following a response that decreases the likelihood that the behaviour will occur again in the future.

Positive Reinforcement: The addition of a stimuli following a response that increases the likelihood that the behaviour will occur again in the future.

Premack Principle: A more likely or preferred activity can reinforce a less likely activity. The child completes a less preferred activity to gain access to a more preferred activity.

Primary Reinforcer: A reinforcer that is naturally reinforcing to the child. The association does not need to be learned by the child. (i.e. candy, food, drink)

Program: designed to teach a skill deficit.

Random Rotation (RR): Target is presented in a random order throughout the sitting while randomly asking for master distractions.

Ratio strain: Abrupt increases in ratio requirements (e.g. jumping from CRF to a VR4 schedule).

Response/Behaviour: The actual behaviour or response the client makes.

Secondary Reinforcer: A reinforcer that is not naturally reinforcing but acquires reinforcing properties to the child. (i.e. tickles, songs, games, toys)

Sitting: combination of several trials for one program.

Stimulus Control: When a response is reinforced, stimuli that immediately precede that response acquire some control over the reoccurrence of the response. A behaviour is said to be under **stimulus control** if it meets three conditions: **(1)** It is immediately offered following the SD **(2)** It is offered only when preceded by the correct SD **(3)** It is not offered in the presence of another SD

Unknown Distracters: items that are presented to the child in the field that act that the child has not previously been taught.

Target: an item or skill that is currently on acquisition.

Variable Interval (VI) schedule: The first CR following a variable interval of time results in reinforcement.

Variable Ratio (VR) schedule: Reinforcement is delivered after a varying number of responses.

Appendix A - Ways to say "Very Good"

Way to go	Well, look at you go
Good going	That's really nice
Way to work	Marvelous
That's a good boy/girl	I'm very proud of you
I like that	You did a lot of work today
You got (# of responses) correct	Keep it up
Good remembering	Superb
Right on	That's great
Nice going	Now that's what I call a fine job
Tremendous	Fantastic
Outstanding	You're really going to town
Beautiful	Perfect
That's the best ever	Fine
Terrific	You haven't missed a thing
That's the way	Wow
That's not half bad	You did it that time
Your getting better every day	Great
Now you've figured it out	That's quite an improvement
Congratulations	That's it
You've just about got it	I'm proud of the way you worked today
Exactly right	That's right
You're on the right track	Super
You've got it made	You've got that down pat
Good for you	I think you've got it now
Good job (name)	You remembered
You figured that out fast	Now you have the hang of it
You are very good at that	That's coming along very nicely
Good work	I'm happy to see you working like that
You are doing much better today	Now you have it
Hooray	You are learning fast
You did it	Couldn't of done it better myself
You make it look easy	You really make my job fun
Outta sight	Got it
Sensational	That's better
Nothing can stop you now	Excellent
That was first class work	Wonderful
Much better	You've just about mastered that
That's better than ever	Your doing fine
You outdid yourself today	You must have been practicing
Even better	That's very much better
Good thinking	Awesome
Not bad	I knew you could do it
You're doing beautifully	Keep on trying



You certainly did well today
That's the right way to do it
You're really improving
One more time and you'll have it
Amazing
Fabulous
Great
Impressive
Nice

You are really learning a lot
That kind of work makes me very happy
You did that very well
I've never seen anyone do it better
Cool
Good
High five
Lovely
Woohoo

Appendix B – Ideas for Reinforcers

- Physical Reinforcement
 - i.e. Hugs, tickles, throw the child in the air, spaghetti arms, spin the child, arm/leg squeezes, airplane ride, horsey ride, piggy-back ride, dancing, pulling on a blanket, jumping on a trampoline
- Social Reinforcement
 - i.e. praise, smiles, cheer, clap, funny faces, funny voices, whistling, singing, wrinkling nose, raising eye brows, back scratch
- Primary Reinforcement
 - i.e. food, drink
- Toys
 - i.e. bubbles, tornado, silly string, puppets, stencils, tops, magnifier glass, play-doh, puzzles, dolls, stuffed animals, blocks, toy cars, slinky, marble run, cards, ribbons, balloons, slime, water play
- Games
 - i.e. go go stop, what time is it mr. wolf, peek-a-boo, tag/chase
- Other
 - i.e. make up brush, measuring tape, fan string of beads, scents/perfume, turning lights on/off, body pillow, blankets

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