Verbal Behavior Milestones Assessment and Placement Program: Administration and Programming

April 23, 2013
Michael Miklos
Amiris DiPuglia
Pennsylvania Training and Technical Assistance Network

PaTTAN's Mission

The mission of the Pennsylvania Training and Technical Assistance Network (PaTTAN) is to support the efforts and initiatives of the Bureau of Special Education, and to build the capacity of local educational agencies to serve students who receive special education services.

PDE's Commitment to Least Restrictive Environment (LRE)

Our goal for each child is to ensure Individualized Education Program (IEP) teams begin with the general education setting with the use of Supplementary Aids and Services before considering a more restrictive environment.

Agenda

- Overview of VB-MAPP: design and administration issues
- General programming considerations
- Common programming for Level 1 and related protocols
- Common programming for Level 2 and related protocols
- Common programming for Level 3 and related protocols

Why the VB-MAPP?

- Few assessment instruments exist that assess acquisition of verbal operants as defined by Skinner, 1957 (value of functional analysis vs. structural analysis of language)
- Efficiency of assessment: the VB-MAPP is designed to be easy and time efficient to administer
- Allows more detailed analysis of skill sets at the operant level (task analysis) when needed
- Links to typical development
- Includes components that can assist in trouble shooting instruction and aiding in transition to less restrictive environments

Teacher Effectiveness and the VB-MAPP

- PATTAN Autism Initiative has linked content from VB-MAPP with Standards Aligned System
- The sequence of skills from basic repertoires through more complex combinative usages are set up to lead students to language skills that will allow higher order acquisition of concepts in content areas and social interactions
- The skill necessary to implement programming from the VB-MAPP are consistent with
  - Establishing a culture of learning
  - Using assessment in instruction
  - Using prompts to facilitate participation
  - Setting instructional outcomes

Verbal Operants

Verbal Operant	Antecedent	Behavior	Consequence
Mand	Motivative Operation (wants cookie)	Verbal behavior (says "cookie")	Direct reinforcement (gets cookie)
Tact	Sensory Stimuli (sees or smells cookie)	Verbal behavior (says "cookie")	Non-specific reinforcement (gets praised, for instance)
Intraverbal	Verbal stimulus (someone says: "What do you eat?")	Verbal behavior (says "cookie")	Non-specific reinforcement (gets praised, for instance)
Echoic	Verbal Stimulus (someone says "cookie")	Verbal behavior: repeats all or part of antecedent (says "cookie")	Non-specific reinforcement (gets praised, for instance)

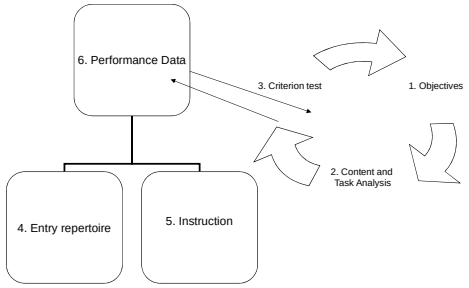
Other Relevant Operants

Operant	Antecedent	Behavior	Consequence
Receptive (actually not a verbal operant)	Verbal stimulus (someone says "touch cookie")* *in this case the cookie must also be present: all receptive discriminations involve 2 S^ds	Non-verbal behavior (child touches cookie)	Non-specific reinforcement (gets praised, for instance)
Imitation Point to point correspondence	Non-verbal behavior (person performs an action, etc.)	Non-verbal behavior with point to point correspondence (person imitates same action)	Non-specific reinforcement (example: praise; 'you're right!', ''great job!' high five, pat on back, etc.)
Match to sample	Non-verbal behavior (presentation of stimuli)	Non-verbal behavior (in presence of one stimuli, a second stimuli is selected with shared properties).	Non-specific reinforcement (example: praise; 'you're right!', ''great job!' high five, pat on back, etc.)

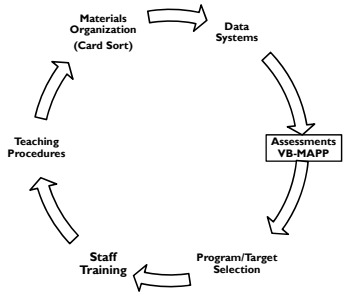
VB-MAPP as Criterion Level Assessment

- Assessment and instruction systems are probably most effective when they are integrated and form a feedback loop.
- The VB-MAPP provides a formative assessment that guides more fine grained analysis of student performance and instructional effectiveness

Markle and Tiemann's System of Instruction (1967)



Program Components Fit Together



VB-MAPP Overview

Video:VB MAPP

VB MAPP Overview

- Guidebook and Protocol Booklet
- 5 Components:
  - VB-MAPP Milestones Assessment
    - Early Echoic Skills Assessment (EESA)
  - VB-MAPP Barriers Assessment
  - VB-MAPP Transitions Assessment
  - VB-MAPP Task Analysis and Skills Tracking
  - VB-MAPP Placement and IEP Goals (only in the guidebook.)

Guidebook 10 Chapters

1. A Behavioral Approach to Language Assessment
2. General Administration Guidelines
3. Milestones Scoring Instructions: Level 1
4. Milestones Scoring Instructions: Level 2
5. Milestones Scoring Instructions: Level 3
6. The Barriers Assessment Scoring Instructions
7. The Transition Assessment Scoring Instructions
8. Interpreting the Level 1 Assessment: Curriculum Placement and Writing IEP Goals
9. Interpreting the Level 2 Assessment: Curriculum Placement and Writing IEP Goals
10. Interpreting the Level 3 Assessment: Curriculum Placement and Writing IEP Goals

Guidebook Highlights

- Summary of a behavioral approach to language
  - Distinction between speaker and listener
  - Form and Function
  - Units of analysis (MO/Sd variables-response-consequence)
  - Distinctions between verbal operants
- Tips for tester
- Materials list
- Scoring guidelines for all sections
- Curriculum placement and IEP goal development guide

VB-MAPP Milestones Assessment

- 3 levels
- 16 milestone areas
- 170 measurable milestones

Levels are Linked to Developmental Sequences

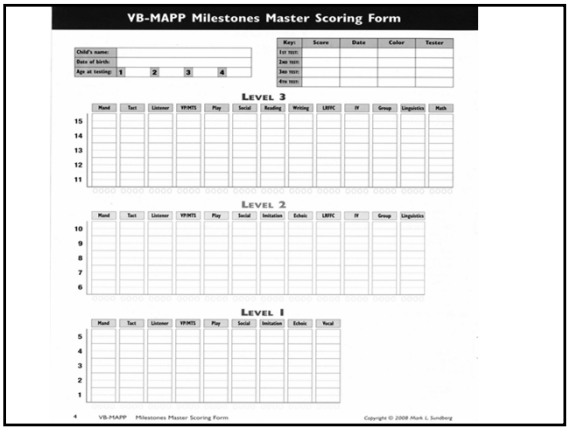
- Level 1= 0-18 months
- Level 2= 18-30 months
- Level 3= 30-48 months

Developmental levels determined by tryout sample with typical children and calibrated with normative samples from other established language instruments. Age ranges are approximate.

Skill Area	Level 1	Level 2	Level 3
Mand	X	X	X
Tact	X	X	X
Listener Resp.	X	X	X
VP/MTS	X	X	X
Play	X	X	X
Social	X	X	X
Imitation	X	X	
Echoic	X	X	
Vocal	X		
LRFFC		X	X
IV		X	X
Group		X	X
Linguistics		X	X
Reading			X
Writing			X
Math			X
TOTAL:	9	12	13

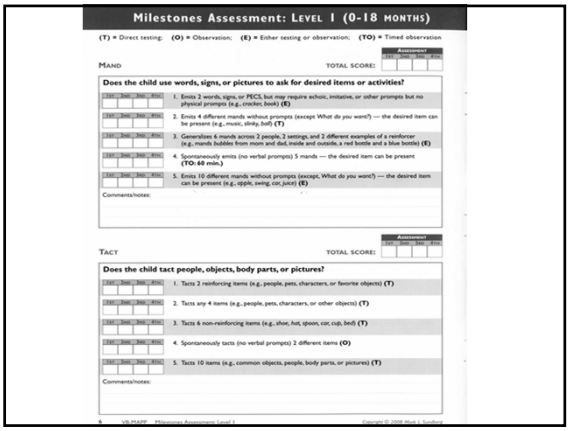
VB-MAPP Assessment Grid

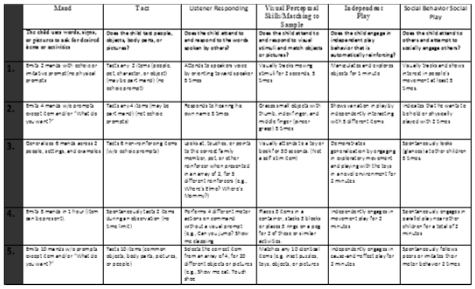
- Provides a graphic presentation of assessment results and progress between re-assessments
- Allows simultaneous display of 4 assessments at different points in time.



Administration and Scoring VB-MAPP Milestones

- 5 items per level in each domain; each scored 1, ½, or 0
- Items assessed by: direct testing (D), observation (O), either (E) D or O, or through a timed observation (TO)
- Prepare materials, label and keep them together if at all possible (some commercial products may be helpful: prepared VB-MAPP kit, V-BATT)





	Motor Imitation	Echoic	Vocal
	Does the child imitate the actions of other people?	Does the child immediately repeat (echo) vowel and consonant phonemes, singly and in combinations?	How often does the child spontaneously vocalize and what is the nature of the vocalization?
1.	Imitates 2 gross motor movements when prompted with "Do this" (e.g. clapping, raising arms, etc)	Scores at least 2 on the EESA subtest.	Spontaneously emits an average of 5 sounds each hour.
2.	Imitates 4 gross motor movements when prompted with "Do this"	Scores at least 5 on the EESA subtest.	Spontaneously emits 5 different sounds, with averaging 10 total sounds each hour.
3.	Imitates 8 gross motor movements 2 of which involve objects (e.g. shaking a maraca, tapping sticks together)	Scores at least 10 on the EESA subtest.	Spontaneously emits 10 different sound with varying intonations averaging 25 total sounds each hour.
4.	Spontaneously imitates the motor behaviors of others on 5 occasions.	Scores at least 15 on the EESA subtest.	Spontaneously emits 5 different whole word approximations.
5.	Imitates 20 motor movements of any type (e.g. fine motor, gross motor, imitation with objects.)	Scores at least 25 on the EESA subtest (at least 20 from group I)	Spontaneously vocalizes 15 whole words of phrases with appropriate intonation and rhythm.

	Mand	Tact	Listener Responding	Visual Perceptual Skills/Matching to Sample	Independent Play Social
	Does the child demonstrate frequent and spontaneous manding primarily controlled by motivation (MOs)?	Does the child tact nouns and verbs?	Is the child acquiring more advanced listener skills?	Does the child match identical and non-identical objects and pictures?	Does the child engage in independent play behavior that is automatically reinforcing?
1.	Mands for 20 different missing items w/o prompts.	Tacts 25 items when asked "what's this?"	Selects the correct item from a messy array of 6 for 40 different objects or pictures (e.g., Find cat. Touch ball.)	Matches identical objects or pictures in a messy array of 6 for 20 items.	Searches for a missing or corresponding toy or part of a set for 5 items or sets (e.g., a puzzle piece, a ball for a go-go toy, a bottle for a baby doll).
2.	Mands for 5 actions.	Tacts across 3 exemplars of 50 items	Generalizes listener discriminations (12x) in a messy array of 8, for three different examples of 5 0 items (e.g., The child can find three examples of a train	Sorts similar colors and shapes for 10 different colors or shapes given models (e.g., given red, blue, and green bowls and a pile of red, blue, and green bears the child sorts the items by color	Independently demonstrates the use of toys or objects according to their function for 5 items (e.g., placing a train on a track, pulling a wagon, holding a telephone to the ear
3.	Emits 3 different 2 word mands (not including "I want").	Tacts across 3 exemplars of 50 items	Performs 10 specific motor actions on command (e.g., Show me clapping. Can you hop?)	Matches identical objects or pictures in a messy array of 8 containing 3 similar stimuli, for 25 items (e.g., matches a dog to a dog in an array that also contains a cat, pig, and pony	Plays with every day items in creative ways 3 times (e.g., uses a bowl as a drum or a box as an imaginary car)
4.	Spontaneously emits 15 different mands in 30 minutes (at least 2 MOs involved).	Tacts 50 two-component verb-noun or noun-verb combinations	Performs 15 specific motor actions on command (e.g., Show me clapping. Can you hop?)	Matches non-identical objects or non-identical pictures in a messy array of 10, for 25 items (e.g., matches a Ford truck to a Toyota truck)	Independently engages in play on structures and a playground equipment for a total of 5 minutes (e.g., going down a slide, swinging) timed observation
5.	Emits 10 new mands without specific training (can be for items trained as tacts or JS buttons as mands).	Tacts a total of 200 nouns and/or verbs.	Selects the correct item in a book, picture scene, or natural environment when named, for 150 items. Pointed to from an assumed list of frequent words)	Matches non-identical objects (20) to pictures (20) and/or vice versa, in a messy array of 10 containing 3 similar stimuli, for 25 items.	Assembles toys that have multiple parts for 5 different sets of materials (e.g., Mr. Potato head, Little People sets, Castle Bugs, King K Tikes).

	Social Behavior Social Play	Motor Imitation	Listener Responding by Function, Feature, and Class	Intraverbal	Classroom Routines and Group Skills
	Does the child spontaneously participate in activities with other children and spontaneously verbally interact with them?	Does the child imitate the actions of other people?	Does the child understand as a listener words that describe or modify nouns and verbs by their functions, features, or classes?	Does the child verbally respond to the content of the words of others?	Does the child follow the daily routines in a classroom and appropriately participate in group activities, and respond in a group teaching format?
6.	Initiates a physical interaction with a peer 2 times (e.g., a push in a wagon, hand holding, Ring Around the Rosy).	Imitates 10 actions that require selecting a specific object from an array (e.g., selects a drumstick from an array also containing a horn and a ball, and imitates an adult's drumming)	Selects an animal or object from an array of 3, for 5 different sounds made by the corresponding items (e.g., Mooo says a..., Toot, toot goes the ...)	Completes 10 different fill-in-blank phrases of any type (e.g., sing fill-ins, social games and fun fill-ins, animal or object sounds	Sits at a group snack or lunch table without negative behavior for 3 minutes.
7.	Spontaneously mands to peers 5 times (e.g., My turn, Push me, Look)	Imitates 20 different fine motor actions when prompted. Do this (e.g., wiggling fingers, pinching, making a fist, making a butterfly)	Selects 5 different foods or drinks when each is presented in an array of 5 (along with 4 non-food or non-drink items) and asked the verbal fill-ins...You eat...and You drink...	Provides first name when asked, What is your name?	Puts away personal items, lines up, or comes to a table with only 1 verbal prompt.
8.	Engages in sustained social play with peers for 3 minutes without adult prompts or reinforcement (e.g., cooperatively setting up a play set, water play	Imitates 10 different three-component sequences of actions when prompted. Do this (e.g., clapping, jumping, touching toes, pick up a doll, place her in a crib, and rock the crib	Selects the correct item from an array of 8, for 25 different LRFFC fill-in statements of any type (e.g., You sit on a ...)	Completes 25 different fill-in-blank phrases (not including songs) (e.g., You eat...You sleep in a ...Shoes and...)	Transitions between classroom activities with not more that 1 gestural or verbal prompt.
9.	Spontaneously responds to the mands from peers 5 times (e.g., Pull me in the wagon, I want the train)	Spontaneously imitates 5 functional skills in the natural environment (e.g., eating with a spoon, putting on a coat, removing shoes)	Selects the correct item from an array of 10 (or from a book), for 25 different verb-noun LRFFC what, which, or who questions (e.g., What do you ride? Which one barks? Who can help?)	Answers 25 different what questions (e.g., What do you like to eat?)	Sits in a small group for 5 minutes without disruptive behavior or attempting to leave the group.

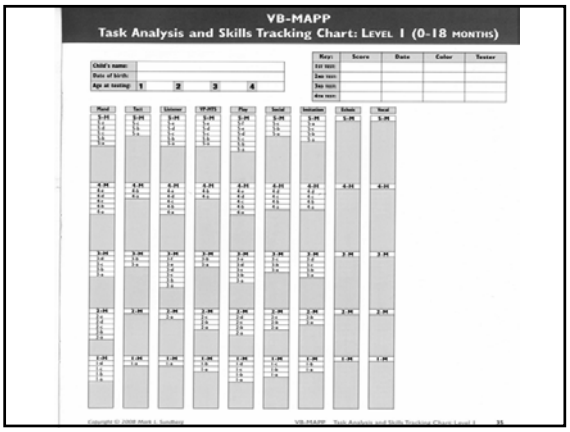
	Mand	Tact	Listener Responding	Visual Perceptual Skills/Matching to Sample	Independent Play
	Does the child mand for information, mand with different parts of speech, and give directions to others?	Does the child emit a wide variety of tacts, and do they contain several different parts of speech?	Does the child understand complex words and sentences involving the different parts of speech?	Does the child complete complex designs, patterns, and sequences?	Does the child spontaneously engage in independent play that is automatically reinforcing?
11.	Spontaneously mands for different verbal information with "Wh" question 3 times in 60 minutes	Tacts color, shape, and function of 3 items.	Selects items by color and shape from an array of 6 similar stimuli, for 4 colors and 4 shapes. (i.e., Find the red car. Find the square cracker.)	Spontaneously matches any part of an arts and crafts activity to another person's sample 3 times.	Spontaneously engages in pretend or imaginary play on 3 occasions.
12.	Politely mands for removal of aversive stimulus an activity for 3 different circumstances.	Tacts 4 prepositions and 4 pronouns	Follows 2 instructions involving 6 different prepositions (e.g. Stand behind the chair.) 4 different pronouns (e.g. Touch my ear).	Demonstrates generalized non-identical matching in a messy array of 10 with 3 similar stimuli, for 25 items.	Repeats a gross motor behavior to obtain a better effect for 2 activities.
13.	Mands with 10 different adjectives, preadjectives, or adverbs in 60 minutes.	Tacts 4 different adjectives excluding colors and shapes and 4 adverbs	Selects items from an array of similar stimuli based on 4 pairs of relative adjectives (e.g., big-little, long-short) and demonstrates actions based on 4 pairs of relative adverbs (e.g., quiet-loud, fast-slow)	Completes 20 different block designs, parquetry shape puzzles, or similar tasks with at least 8 different pieces.	Independently engages in arts and crafts type activities for 3 minutes.
14.	Gives directions, instructions, or explanations as to how to do something or participate in an activity 3 times.	Tacts using 4 or more words 20 times	Follows 3-step directions for 10 different directions (e.g. Get our coat, hang it up, and sit down)	Sorts 3 items from 3 different categories without a model.	Independently engages in structured play activities for 10 minutes without adult prompts or reinforcement.
15.	Mands for others to attend to his own verbal behavior at least 3 times	Tacts at least 1000 non-verbal stimuli (nouns, verbs, adjectives, etc.) tested from a list of known tacts.	Has a total listener repertoire of 1200 words (nouns, verbs, adjectives, etc.), tested or from an accumulated list of known words.	Continues 20 three-step patterns, sequences, or serialization tasks (i.e., star, triangle, heart, star, triangle)	Independently draws or writes in preacademic activity books for 3 mins (e.g. dot-to-dot, matching games, mazes, tracing letters and numbers)

	Social Behavior Social Play	Reading	Writing	Listener Responding by Function, Feature, and Class	Intraverbal
	Does the child spontaneously engage in play and reciprocal verbal interactions with peers?	Does the child show interest in words and books, tact and LD letters, and read and comprehend a few words?	Does the child draw, copy letters and numbers, and independently write his name?	Does the child understand as a listener multiple words that describe or modify nouns and verbs by their function, features, or classes?	Does the child verbally respond to the content of the words of others?
11.	Spontaneously cooperates with a peer to accomplish a specific outcome 3 times.	Attends to a book when a story is being read to him for 75% of the time.	Imitates 3 different writing actions modeled by an adult using a writing instrument and writing surface.	Selects the correct item from an array of 10 that contains 3 similar stimuli (e.g. similar colors, shape, or class, but they are the wrong choices), for 25 different WH questions LRFFC tasks.	Spontaneously emits 20 intraverbal commands (can be part mands) (e.g., Dad asks I'm going to the car, and the child spontaneously asks, I want to go for a ride)
12.	Spontaneously mands to peers with WH questions 5 times.	Selects (IDs) the correct uppercase letter from an array of 3 letters, for 10 different letters.	Independently traces with ¼ inch of the lines to 3 different geometrical shapes (e.g. circle, square, triangle, rectangle, star)	Selects items from a book based on 2 verbal components either a feature (e.g., color), function (e.g., draw with), or class (e.g., clothing) for 25 LRFFC tasks (e.g., Do you see a brown animal? Can you find some clothing with buttons?)	Demonstrates 300 different intraverbal responses, tested or obtained from an accumulated list of known intraverbals
13.	Intraverbally responds to 5 different questions or statements from peers.	Tacts 10 uppercase letters on command.	Copies 10 letters or numbers legibly.	Selects items from a page in a book or in the natural environment based on 3 verbal components (e.g., verb, adjective, preposition, pronoun), for 25 WH questions LRFFC tasks (e.g., Which fruit grows on trees?)	Answers 2 questions after being read short passages (3+ words) from books, for 25 passages (e.g. Who blew the house down?)
14.	Engages in pretend social play activities with peers for 5 minutes without adult prompts.	Reads his own name.	Legibly spells and writes his own name without copying.	Selects the correct items from a book or the natural environment given 4 different rotating LRFFC questions about a single topic (where does the cow live? What does the cow eat? Who milks the cow?) for 25 different tasks	Describes 25 different events, videos, stories, etc. with 5+ words (e.g. Tell me what happened...The monster scared everybody and they all ran into the house.)
15.	Engages in 4 verbal exchanges on 1 topic with peers for 3 topics. (e.g. the children go back and forth talking about making a creak in a school)	Matches 3 words to the corresponding picture or item in an array of 5 and vice versa (e.g. matches the written word bird to a picture of a bird).	Copies all 26 upper and lower case letters legibly.	Demonstrates 1000 different LRFFC responses, tested or obtained from an accumulated list of known responses	Answers 4 different rotating WH questions about a single topic for 10 topics (e.g. Who takes you to school? Where do you go to school? What do you take to school?)

	Classroom Routines/Group Skills	Math	Linguistic Structure
	Does the child follow classroom routines and learn in a group-teaching format?	Does the child demonstrate beginning math skills involving numbers, quantities, counting, and measurement? (related beginning geometry skills, such as shapes, are assessed in other sections)	Is the child emitting more complex syntax and language structure demonstrated by correct grammatical use of plurals, possession, tense markers, and noun and verb modifiers?
11.	Uses the toilet and washes hands with only verbal prompts.	Identifies as a listener the numbers 1-5 in an array of 5 different numbers.	Emits noun inflections by combining 10 root nouns with suffixes for plurals (e.g. dog is dogs, and 10 root nouns with suffixes for possessions (e.g. dogs collar is, cat's collar).
12.	Responds to 5 different group instructions or questions without directly prompts in a group of 3 or more children (e.g., Everybody stand up. Does anyone have a sweatshirt on?)	Tacts the numbers 1-5	Emits verb inflections by combining 10 root verbs with affixes for regular past tense (e.g. played) and 10 root verbs with affixes for future tense (e.g. will play)
13.	Works independently for 5 minutes in a group, and stays on task for 30 % of the period.	Counts our 1-5 items from a larger set of items with 1 to 1 correspondence. (e.g. Give me 4 cars. Now give me 2 cars.)	Emits 10 different noun phrases containing at least 3 words, with 2 modifiers (e.g. adjectives, prepositions, pronouns) (e.g. He's my puppet. I want chocolate ice cream.)
14.	Acquires 3 new behaviors during a 15-minute group-teaching format involving 3 or more children	Identifies as a listener 8 different comparisons involving measurement (e.g. show me more or less, big or little, long or short, full or empty, loud or quiet).	Emits 10 different verb phrases containing at least 3 words with 2 modifiers (e.g. adverbs, prepositions, pronouns) (e.g. Push me hard. Go up the steps).
15.	Sits in a 20-minute group session involving 5 children without disruptive behaviors and answers 5 intraverbal questions.	Correctly matches a written number to a quantity and a quantity to a written number for the numbers 1-5 (e.g. matches the number 3 to a picture of 3 trucks)	Combines noun and verb phrases to produce 10 different syntactically correct clauses or sentences containing at least 3 words (e.g. The dog licked my face.)

VB-MAPP Task Analysis

- Allows specification of instructional programs: identifies sub-list of objectives within each Milestone.
- Not a formal task analysis per se
- Provides a more detailed analysis of skill sets at operant level for Milestones Assessment.

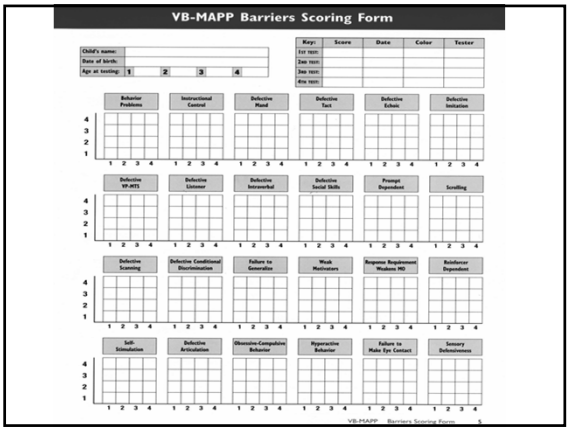


Barriers Assessment

- Identifies and scores 24 learning and language acquisition barriers
- Rating scale format (can be used to formulate functional analysis procedures)
- Low scores are good scores
- Not a skills assessment: identifies behaviors that can be targeted for intervention such as reducing scrolling; reducing dependence on FR1, addressing MO, increasing mand repertoire, etc.

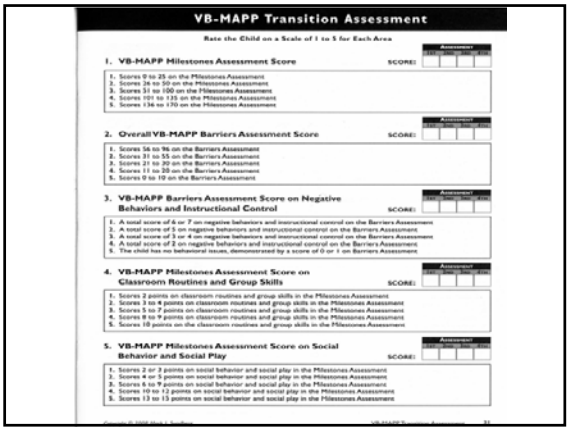
24 Barriers

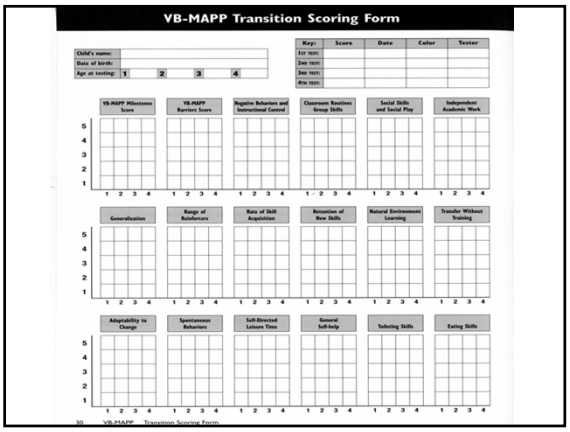
- Negative behavior
- Instructional control
- Absent, weak, impaired mand
- Absent, weak, impaired tact
- Absent, weak, impaired imitation
- Absent, weak, impaired echoic
- Absent, weak, impaired matching to sample
- Absent weak, impaired listener repertoires
- Absent, weak, impaired intraverbal
- Absent, weak, impaired social behavior
- Prompt dependent
- Scrolling responses
- Impaired scanning skills
- Failure to make conditional discriminations
- Failure to generalize
- Weak or atypical motivators
- Response requirement weakens motivation
- Reinforcement dependent
- Self stimulation
- Articulation problems
- Obsessive-compulsive behavior
- Hyperactivity
- Failure to make eye contact or attend to people
- Sensory defensiveness



Transition Assessment

- A guide to assist IEP teams in considering transitions (not prescriptive)
- Based on three areas:
  - VB-MAPP scores and academic performance
  - Learning patterns (such as generalization, variation of reinforcers, etc.)
  - Self-help, spontaneity, and self-direction




VB-MAPP Transition Scoring Form

Child's name:
Date of birth:
Age at testing: 1 2 3 4

Key:	Score	Date	Color	Tester
1st test:				
2nd test:				
3rd test:				
4th test:				

VB-MAPP Milestones Score | VB-MAPP Barriers Score | Negative Behaviors and Instructional Control | Classroom Routines Group Skills | Social Skills and Social Play | Independent Academic Work

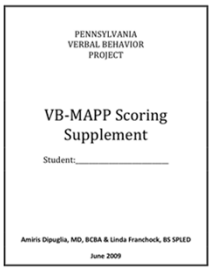
Generalization | Range of Reinforcers | Rate of Skill Acquisition | Retention of New Skills | Natural Environment Learning | Transfer Without Training

Adaptability to Change | Spontaneous Behaviors | Self-Directed Leisure Time | General Self-help | Toileting Skills | Eating Skills

30 VB-MAPP Transition Scoring Form

Another Very Useful Form

- Contains examples of different items to assess linked to the specific milestone
- Also allows assessors to document the student's acquired skills
- Provides a list specific acquired skills that may be targeted for instruction and for maintenance programming

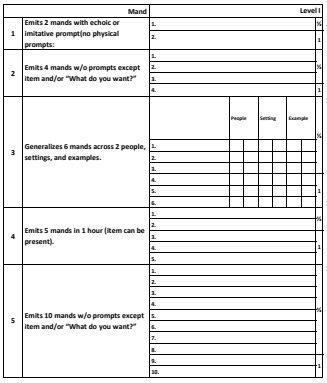

PENNSYLVANIA
VERBAL BEHAVIOR
PROJECT

VB-MAPP Scoring
Supplement

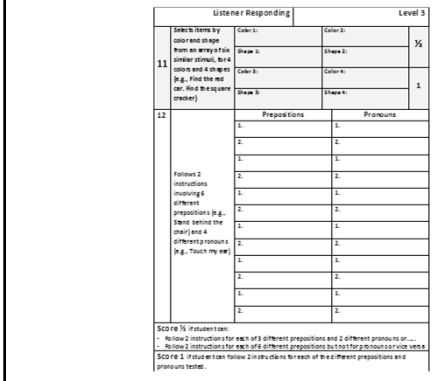
Student:_____

Amiris Dipuglia, MD, BCBA & Linda Franchock, BS SPLED

June 2009



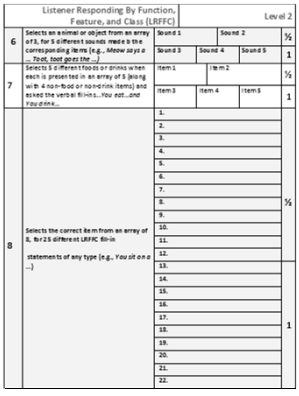
	Mand	Level 1	
1	Emits 2 mands with echoic or imitative prompt(no physical prompts:	1. 2.	½ 1
2	Emits 4 mands w/o prompts except item and/or "What do you want?"	1. 2. 3. 4.	½ 1
3	Generalizes 6 mands across 2 people, settings, and examples.	People / Setting / Example 1. 2. 3. 4. 5. 6.	½ 1
4	Emits 5 mands in 1 hour (item can be present).	1. 2. 3. 4. 5.	½ 1
5	Emits 10 mands w/o prompts except item and/or "What do you want?"	1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	½ 1



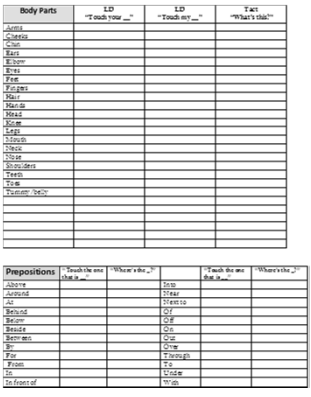
	Listener Responding	Level 3	
11	Selects items by color and shape from an array of six similar stimuli, for 4 colors and 4 shapes (e.g., Find the red car. Find the square cracker)	Color 1: / Color 2: Shape 1: / Shape 2: Color 3: / Color 4: Shape 3: / Shape 4:	½ 1
12	Follows 2 instructions involving 6 different prepositions (e.g., Stand behind the chair) and 4 different pronouns (e.g., Touch my ear).	Prepositions / Pronouns 1. / 1. 2. / 2. 1. / 1. 2. / 2. 1. / 1. 2. / 2. 1. / 1. 2. / 2. 1. / 1. 2. / 2.	

Score ½ if student can:
- Follow 2 instructions for each of 3 different prepositions and 2 different pronouns or....
- Follow 2 instructions for each of 6 different prepositions but not for pronouns or vice versa

Score 1 if student can follow 2 instructions for each of the different prepositions and pronouns tested.



	Listener Responding By Function, Feature, and Class (LRFFC)	Level 2	
6	Selects an animal or object from an array of 3, for 5 different sounds made b the corresponding items (e.g., Meow or point ... Toot, toot goes the ...)	Sound 1 / Sound 2 Sound 3 / Sound 4 / Sound 5	½ 1
7	Selects 5 different foods or drinks when each is presented in an array of 3 (along with 4 non-food or non-drink items) and asked the verbal fill-ins...You eat...and You drink...	Item 1 / Item 2 Item 3 / Item 4 / Item 5	½ 1
8	Selects the correct item from an array of 3, for 25 different LRFFC fill-in statements of any type (e.g., You sit on a ...)	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22.	½ 1



Body Parts	LD "Touch your ___"	LD "Touch my ___"	Tact "What's this?"
Arms			
Cheeks			
Chin			
Ears			
Elbow			
Eyes			
Feet			
Fingers			
Hair			
Hands			
Head			
Knee			
Legs			
Mouth			
Neck			
Nose			
Shoulders			
Teeth			
Toes			
Tummy /belly			

Prepositions	"Touch the one that is ___"	"Where's the ...?"		"Touch the one that is ..."	"Where's the ...?"
Above			Into		
Around			Near		
At			Next to		
Behind			Off		
Below			Off		
Beside			On		
Between			Out		
By			Over		
For			Through		
From			To		
In			Under		
In front of			With		

			Respond by Feature						Respond by Function						Respond by Class					
Item	T	R	Feature	T	R	LR	T	TR	IV	IVR		LR	T	TR	IV	IVR		LR	T	TR	IV	IVR
Boat			Sail								Floats on water						Vehicle					
			Mast								Go fishing on it											
			Bow								Take ride on it											
			Stern																			
Book			Pages								Read it						Find at library					
			Bind																			
			Cover																			
			Words																			
			Pictures																			
Bowl			Round								Put cereal/soup in						Find in kitchen					
Bread			White & brown								Toast it						Food					
			Crust								Eat it											
											Make sandwich with											
Broccoli			Green								Grown in garden						Food					
											Eat it						Vegetable					
											Cook it											
Broom			Handle								Sweep with											
			Bristles								Clean floors with it											
Brush			Handle								Brush hair with											
			Bristles																			
Butterfly			Wings								Flies						Insect					
			Antennae																			
Bucket			Has a handle								Holds sand in it											
											Play at the beach with it											
Cake			Sweet								Eat at birthday parties						Food					
			Frosting/icing								Bake it						Dessert					
			Has candles																			
Calendar			Months								Hang on wall											
			Days								Tells you dates											
			Dates																			
Camera			Lens								Take pictures with						Electronic					
			Buttons																			
			Batteries																			
			Strap																			
Candy			Sweet								Eat it						Food					
			Sticky														Snack					
Can Opener			Blade								Open cans with it						Things in kitchen					
			handle																			

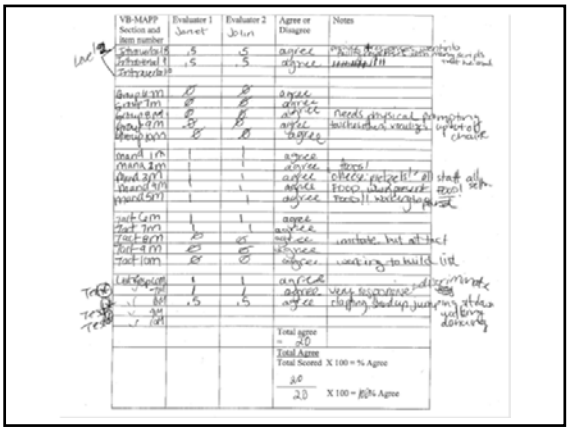
Verifying Reliability

VB-MAPP Reliability Check Form

Procedure:

- Pre-select 3 items per domain The three items should be selected from the range of items that are likely to be acquired or close to acquired for the student's to be observed. Avoid selecting items that are way beyond what you estimate to be the student's competency level.
- Simultaneously score the selected the items with the site classroom VB-MAPP administrator. During this process, either the VB consultant or the Local VB-MAPP administrator can administer the items to the student. Be sure, however, that both individual evaluators are not able to determine how each has scored the selected reliability items.
- Upon completion of the reliability items, enter scores from both evaluators on this score sheet.
- Calculate agreement by the formula presented on the last line of this chart. Agreement needs to be at 90% or higher. If lower levels of agreement are found, check scoring criteria, discuss, re-train as necessary and then re-check reliability by repeating this process.

VB-MAPP Section and item number	Evaluator 1	Evaluator 2	Agree or Disagree	Notes
			Total agree =	
			Total Agree Total Scored X 100 = % Agree	
			_____ X 100 = % Agree	



General Programming Considerations

Videos: Programming

Programming from the VB-MAPP Requires Certain Staff Prerequisites

- Basic skills related to concepts and principles of ABA
- Working skills related to the analysis of verbal behavior
- Ability to read and implement instructional protocols
- Data skills and graphing skills
- Organizational skills
- Motivation: effective implementation must have value to staff

General Guidelines VB-MAPP Programming

- Complete VB-MAPP assessment
- Note performance level obtained in each column (skill domain).
- For the first gap (skill not acquired) in each column, develop instructional program.
- Remember there may occasionally be exceptions to this rule of thumb
- Refer to task analysis for detailed program selection as necessary.

Interpreting the Overall VB-MAPP Milestone Assessment Results By:

1. **Identifying** the general level of the child
2. **Analyzing** the scores in each of the relevant skill areas;
   - i.e. determine skill sets in relation to selecting known items, items that can serve as prompts and assist in selection of target items and response forms.
3. **Selecting Instructional Programs** that are balanced across operants and at appropriate instructional level
   - For example you would probably not introduce reading, writing and math goals if your student is a level 1 learner; these pre-academic skills are not usually appropriate for their functional level. Skill areas, such as LRFFC and IV only begin to emerge once a child has strong foundational skills in Level 1

When Programming

- Be sure targets are relevant for student:
  - Usually valuable to student
  - Common in day-to day life
  - Tied to general education curriculum
  - Will promote and facilitate social initiations and interactions.
  - Will promote independence
- Be sure programming is consistent with student's response form (vocal vs. sign)
- Be sure instructional materials are available for specific items selected within programs (card sort system)

Organization of Materials Based on VB-MAPP

One Example: Card Sort for Intensive Teaching

- 4 pile system (quick review)
- Targets come from skill tracking sheets: items introduced but not mastered
- Easies come from skill tracking sheets, items introduced and mastered (or for some items, from lists noted as strongly acquired on VB-MAPP assessment)

Video: developing and using card sort

Existing Skills vs. Target Skills Considerations for DTI Materials Organization

- **EXISTING/KNOWNS/EASIES/ MAINTENANCE ITEMS**

  Develop 3x5 index cards and/or pictures of exemplars and place in bank of known items (in our case "easy piles")

  For active programs these items are written on the Skill Tracking Sheet with the word ASSESSED or Probed Out in the date introduced and mastered columns.

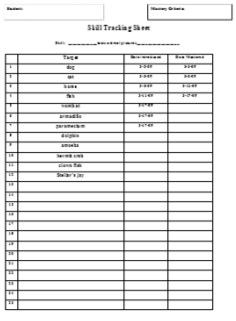
- **TARGET SKILLS**

  Develop 3x5 index cards and/or pictures of exemplars and place in bank of items to be targeted for instruction (in our case "target piles" or future targets).

  For active target skills these items are written on the Skill Tracking Sheet with a date introduced as well as listing them on the cold probe sheet

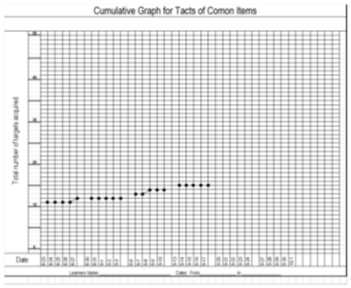
  For items that will be targeted in the future, list on skill tracking sheet with no date introduced.

Examples of Data Sheets with Targets and Existing Skills


Skill Tracking Sheet


Weekly Probe Sheet

Develop Cumulative Graph for Each Active Program



Considerations for Selection of Assessment Items and/or Target Items

- Relevant content in relation to student's life circumstances
- Are reasonably common in the cultural setting (e.g. rather than "household appliances" use "things in the kitchen")
- Reasonable range of exemplars: shows both examples that are "close in" and those that are more regularly associated with the concept
- Sufficient number of exemplars within a program (e.g. number of tacts) and for each item (e.g. number of "car" stimulus items) to allow appropriate generalization and concept development

Where Do Mand Targets Come From?

- Preference assessment
- Items for which there is consistent motivation
- Things that will be needed by the student in their day-to-day life
- Items in which the response form can be prompted and emitted with reasonable accuracy

Selection of Verbal Response Forms

- VB-MAPP protocol
  - Echoic level
  - Imitation skills
  - Spontaneous vocal
- History of response to intervention
  - How long have signs been tried?
  - Verify quality of implementation of training efforts

Selecting Prompts From VB-MAPP Domains

General rule: use known skills that can be reliably evoked and that share the *same topography* with target skill

	Sign	**Vocal**
Mand	Imitation/intraverbal (for sign)	echoic/tact
Tact	imitation	echoic
Echoic	NA	earlier established skills (EESA)
Intraverbal	signed tacts/imitation	tact/echoic
Listener Responding	Imitation/match to sample	imitation/tact/echoic/ match to sample

Why Tact Prompts are Generally Superior to Echoic Prompts for IV Trials

- Echoic Prompts: verbal + verbal SD
- Tact Prompts: verbal + sensory SD (textual prompts also fit the bill for certain students) (Vedora, et al. 2009; Goldsmith, et al., 2007)
- Cross modality discrimination may be easier ("boundary detection")
- Picture prompt on the back of the IV card

Video selecting prompts

Common Programming Procedures for Level 1 and Related Protocols

Earliest Learners in Level 1

- Saliency of attending response (VP/MTS 1; attends to speakers voice LR1, IP1)
- Consideration instructional control
  - Are adults established as conditioned reinforcers for the student: pairing process; "free" delivery (in absence of problem behavior)
- Identification and conditioning of adequate pool of reinforcers
- First programs:
  - Approach behavior
  - Mand
  - Imitation (objects and motor)
  - Match to sample
  - LR in context

Programs for Students with Echoic Skills

- Does not rule out the need for augmentative communication training (sign language)
- If echoic repertoire includes intelligible words, more likely to use vocal response form
- May need to further develop differential reinforcement of vocal responding in mand frame and/or echoic program

Programs for Students with Some Imitation/Minimal Vocal/No Echoics

- Signed response form for mand training
- Build imitation skills; may need to start with action on objects, but motor imitation is central
- Often teach specific signs as imitation responses
- Also teach MS/Listener Responding
- Dense schedule of manding/NET/some DTI

Level One: Balancing Programs

- Often beginning level one students receive only "pairing", match to sample, imitation and listener responding
- Avoid neglect of procedures to build mand, tact and echoic

Impaired Mand: Some Programming Considerations

- Schedule adequate opportunities to mand
- Provide mand trials across a variety of MO items, across a variety of listeners, and across settings.
- Check for MO
- Plan to fade mand prompts: two types of mand transfer trials: within trial and second trial transfer
- Consistently use correction procedures for scrolling
- Be careful with use of "generalized mands", especially at first
- Avoid chaining extraneous behaviors into mand responses (reach first, then sign)
- Relation of vocal mands to echoics: select vocal response forms carefully. Use of vocal mand form may require differential reinforcement of vocal responding in mand frame or specific echoic program
- Sequence mand skills carefully: don't move too early to multiple component mands or increased MLU for mands; to yes/no mands

Impaired Tact: Some Programming Considerations

- Teach many tacts
- Teach sufficient exemplars for tact targets
- Be sure student can tact objects
- Provide sufficient tact training opportunities
- Sequence tact instruction carefully: do not stop at tact objects; teach tacts for actions, multiple component tacts, etc
- Be sure controlling variables are right (that what you think is a tact is really a tact and not a mand, or in the case of prompt dependency, an echoic)

Impaired Imitation

- Schedule adequate opportunities for imitation trials
- Check for Mo/be sure instructional control established
- Sequence action to be imitated carefully
- Plan to fade prompts (appropriate use of transfer trials)
- Be sure imitative discrimination is taught (both for object imitation and motor imitation)
- Consistently use correction procedures
- Provide sufficient training to establish generalized imitation repertoire
- Teach imitation to fluency
- Require clean responding (but keep in mind shaping process)

Impaired Scanning

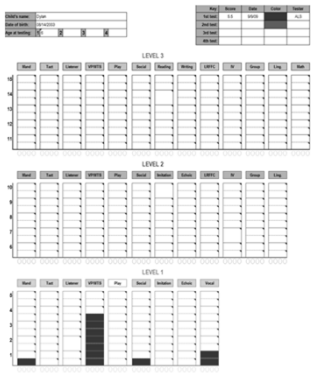
- Avoid "look here" or "Johnny, look here"
- Use sufficient 0 second prompts but fade prompts asap
- Fade in complexity of array
- May need to start with scanning between reinforcers
- Keep field dynamic (avoid shaping up location selection bias)
- Avoid mastering in field size of 2
- Teach skills such as touch item and/or match item in various locations
- Run MS/LR discrimination skills as fluency trials

Social and Play

- The main focus for level 1 learners is conditioning items, activities and peers as reinforcers
- Motivational variables: establishing the value of social interactions
- Be careful not to target eye contact too early (rather condition others as reinforcers as above) *Social item 3*
- Spontaneity: hard to program for! (Comes from multiple exemplar training and fluent responding) *Social items 4-5*

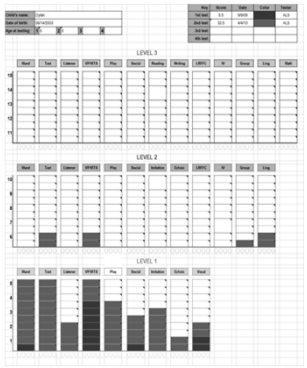
Dylan

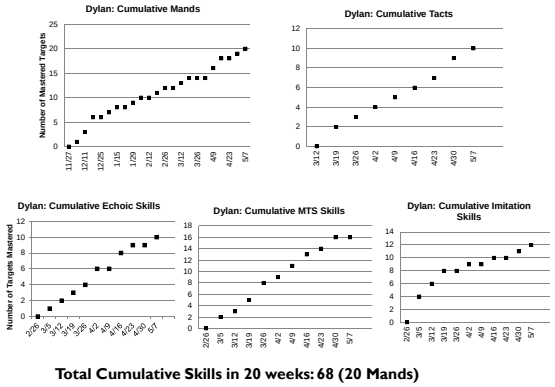
- 6 Years old
- 1st year in the Project
- Attends Autism support classroom (elementary)
- Barriers for Dylan included instructional control issues, response requirement weakening MO, and impaired mand repertoire



Dylan Programming

- Initial Programming:
  - Intensive mand training
  - Establishing instructional control
- 2nd Phase Programming:
  - Imitation
  - Match to sample
  - Tacting common items
  - Vocal Shaping
  - Conditioning peers as reinforcers



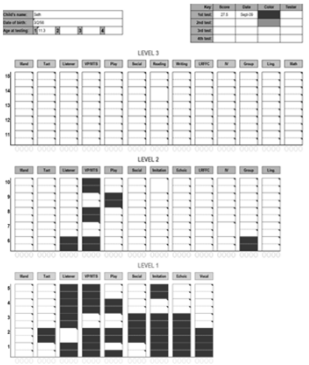


Total Cumulative Skills in 20 weeks: 68 (20 Mands)

Seth

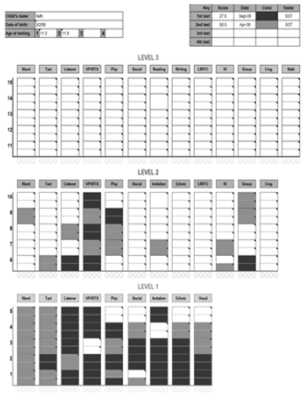
Age: 12 years

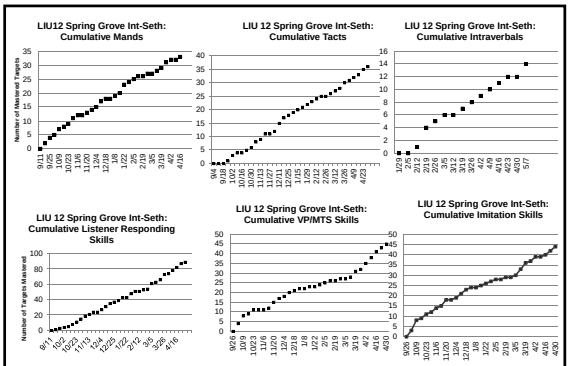
Special Education eligibility: Autism



Seth Programming:

- Response Form: Sign Language
- Mand: Manding for items sign or vocal
- Listener Responding: pictures of common items, performing actions, touch body part
- Tact: common items
- Intraverbal: fill-in song/animal noise/common phrase
- Visual Performance/Match to Sample: shapes/colors, non-identical pictures-field of 10
- Motor Imitation: Fine motor, motor w/objects
- Echoic: CV, some early Kauffman breakdowns





Total Cumulative Skills in 31 weeks: 261

Level 2

Purpose of Level 2 Programs and Considerations

- Careful programming and sequencing of skills helps avoid producing unwanted barriers that will impede development of a broad language repertoire and which we must eventually address in the future.
- Considerations:
  - Don't be tempted to move too fast through these intervention programs.
  - Careful analysis of the appropriates sources of control.
  - Build a solid foundation of prerequisite skills on which to base advanced skills.

Level 2 Learners

MAND

- Expand mands for items, activities, actions: be careful not to stop #5 from level 1 at the 10 criteria…
- Increase rate of manding
- Mands for missing items
- Spontaneous mands (solely under MO Control..no item present)
- 2-component mands
- Multiple component mands
- Y/N mands (from task analysis: be careful with this! Remember MO variable, don't teach too early, can become a generalized mand)
- #9 and 10 come with multiple exemplar training and density of opportunity to mand: rarely need specific programming

Level 2 Learners

TACT

- Expand tacts for items
- Tacting ongoing actions
- Tact parts/features of items
- Tact class of set of items
- Two component tacts (noun-noun, noun verb)
- Tact adjectives (relative concepts: long, big, etc)
- Tact prepositions (may need advanced analysis; is a relative concept)
- Yes/No tacts (remember this is really an autoclitic and quite complex to teach: conditional discrimination or joint control protocols suggested)
- Tact exclusion from category

Level 2 Learners

Listener Responding

- Discriminating items in larger fields, in messy arrays, and with similar stimuli
- Expand performing motor actions on command
- Discriminating items in picture/book scenes and/or the natural environment
- Discriminate parts/features
- Follow instructions involving adjectives and prepositions
- Follow two component instructions
- Follow three component instructions

Level 2 Learners

Visual Performance/Match-to-Sample

- Match identical items in larger fields, messy arrays, and with similar stimuli
- Match non-identical items (same progression as identical, if necessary)
- Replicating 3-D block designs, block designs on pictures as well as from pictures
- Gradually increase difficulty of puzzles
- Replicate and then extend sequence patterns
- Matching items in the natural environment

Level 2 Learners

Social and Play

- Peer-Peer pairing
- Peer-Peer manding
- Play/Leisure skills: can, and should, include independent engagement.

Level 2 Learners

Imitation

- Imitation of objects requiring discrimination
- Fine motor imitation
- Imitation fluency
- Multiple step motor imitation
- Imitation free of verbal S^D (fluency drills may help in teaching this step)

Level 2 Learners

Intraverbal

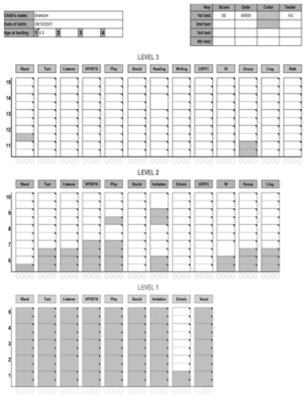
- Fill in responses
  - Fun activities
  - songs
- Responding to questions regarding personal information
- Intraverbal by feature, function, and class
- Answering what, who, where questions

Brandon

Age: 9 years

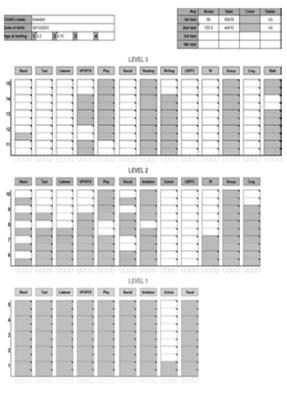
Eligibility Category: Autism

Primary Response Form: Sign Language



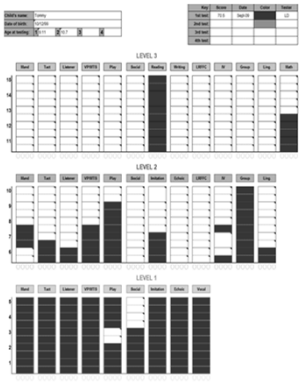
Brandon Programming:

- Fine Motor Imitation, spontaneous imitation, imitation of speed, MI with objects in discrimination.
- IV: fill in songs, fill in everyday activities, sign given word, personal information- name
- Echoic: sequence of numbers, imitate sounds and blends, reinforcing words/items
- Reading: receptive ID and tact of letters, matching word to picture, receptive ID of name
- Math: receptive & tact numbers 10-20, count sets of items vocally up to 15
- Writing: trace letters A-H capital and lowercase, copy name, trace lowercase t,a,i, r,n,m,c,e.
- Tact: Label common pictures, body parts on self, body parts on others, body parts by picture, actions of others.
- Listener Responding: follow directions- simple motor movements, common pictures, body parts on others, identify items from scenes in a book, go to specific person and get an item, take items and give to specific person.
- Visual Performance: interlocking puzzles, matching non identical action pictures, match picture of body part to self, replicate sequence



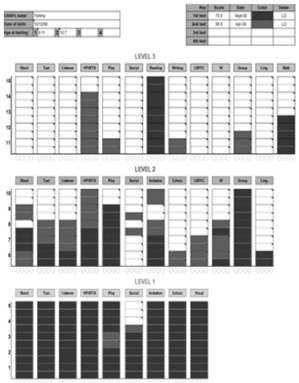
Tommy

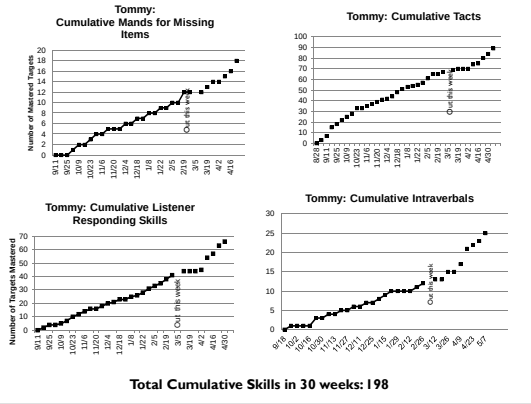
- 10 years old
- 5th year in the project
- Attends an autism support classroom at an intermediate school
- Started as a non-vocal learner with limited skills across all operants



Tommy Programming:

- Mands for missing items
- Tacts for items, actions, parts/features of items
- LR: Following instructions to perform actions, receptive discrimination of parts/features
- Intraverbal FFC's
- Small group instruction
- Conditioning peers





Total Cumulative Skills in 30 weeks: 198

Level 3

Purpose of Level 3 Programs

- To continue building on basic learning skills that include more complex language skills.
- Building toward academic performance, group instruction and more complex verbal and social relations (Will not cover in depth academic components)
- Procedures need to include:
  - Generalization
  - Spontaneity
  - Transfer between operants
  - Social and verbal interactions with peers
  - Use of new skills in a functional and meaningful way in the student's day to day natural environment.

Level 3 Learners

MAND

- Mands for removal of aversive stimuli (remember why this is at level 3!)
- Mands for attention
- Mands for information

Level 3 Learners

TACT

- Expand tacts for adjectives, prepositions
- Tact pronouns, adverbs
- Tact at least 4 specific aspects of items when presented with rotating verbal questions about the item.
- Tact emotional states and social situations

Level 3 Learners

Listener Responding

- Discriminate 4-component non-verbal combinations
- Follow instructions involving adjectives and prepositions
- Follow instructions regarding pronouns and adverbs
- Discriminate among common social situations and emotional states

Level 3 Learners

Visual Performance/Match-to-Sample

- Expand non-identical matching (large messy arrays with at least 3 similar stimuli)
- Extend or continue patterns and sequences
- Sorting items into categories
- Matching models of art/craft type activities

Level 3 Learners

Social and Play

- Peer-Peer manding with "Wh" questions
- Play/Leisure skills…independent
- Play/Leisure…with peers
- Verbal exchanges with peers

Level 3 Learners

LRFFC

- Select correct item from natural environment when presented with a "WH" question regarding feature, function, or class of items
- Select correct item when given 4-component "WH" questions
- Select multiple items ("all", specific quantities, "both")

Level 3 Learners

Intraverbal

- Increased range of intraverbal responses (300+); can include expanding FFC's
- Respond to "WH" questions
- Answer intraverbal yes/no questions
- Describe events, movies, stories
- Answer questions about a story read
- Answer multiple questions regarding a specific topic

Level 3 Learners

Classroom Routines

- Work independently in a group for 5-15 minutes and stay on task
- Toileting skills

Group Instruction

- Respond in group to known instructions (unison/choral responding)
- Learning new behaviors in a group format

Academic Skills in Conjunction or Beyond VB-MAPP

- If student not at grade level, use sequenced and evidence-based curricula to teach academic skills (Reading Mastery, Corrective Reading, Distar Math, Connecting Math Concepts, Language for Learning, Sensible Pencil).
- Make sure students have necessary skills to begin these programs…Placement test does not necessarily give you this information.

Reading Mastery

- Echo sounds/words
- Imitate prosody…speed (fast and slow)
- Sustain a sound for about 3 seconds
- Follow simple instructions

Language for Learning

- Echo words/phrases
- Discriminate and Tact many items and actions
- Respond to simple yes/no questions
- Perform simple actions on command
- Describe objects (parts/features)
- Respond to name

Distar Math

- Echo words/phrases
- Respond to simple yes/no questions
- Respond to "Stop"
- Rote count
- Match-to-sample
- Replicate patterns/sequences
- Prepositions/positional concepts (top/bottom, first, next…)

So what do I teach if he/she is not ready?

- Start with "show me ready":
  - Ready hands (hands folded on lap)
  - Seated in chair
  - Feet on floor
  - Body and eye gaze oriented toward teacher
- Teach first in imitation, then transfer to listener response

Other Critical Skills

- Choral/unison: Students' ability to respond along with others in a group setting (responding on signal).
- Individual Responding: Student's ability to respond when called on in a group setting.
- Waiting for others individual responses: Student's ability to remain quiet and attentive when it is another student's individual turn to respond.

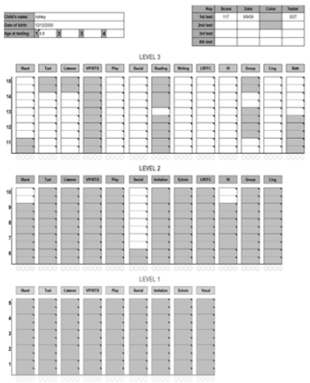
Video: Tonya group

Ashley

Age: 9 years

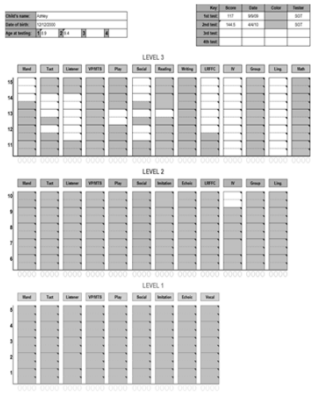
Eligibility Category: Autism

Vocal response Form



Ashley Programming:

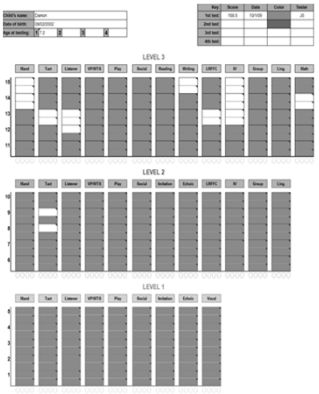
- Manding: for information using who and where questions
- Peer to Peer Manding
- Visual Performance: continuing a pattern, sequencing, replicating block designs
- Tact: common items/pictures, multiple component noun/noun, adjectives, 2 component noun/verb and verb/noun combinations
- LR: perform 2 consecutive actions, adjectives, common items/pictures, ID items that don't belong, 2 step actions
- Echoic: echo phrases, number sequences
- IV: Feature, function, class
- Reading: grade level site words, reading groups of known words and phrases, Headsprout
- Language for Learning and Reading Mastery Spelling: grade level site words
- Math: count given items



Damon

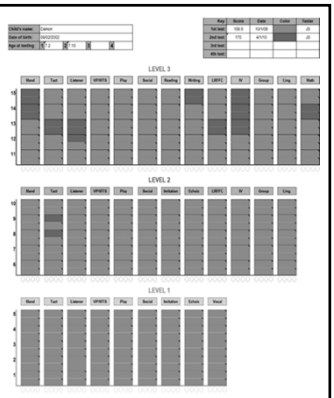
Age: 9 years

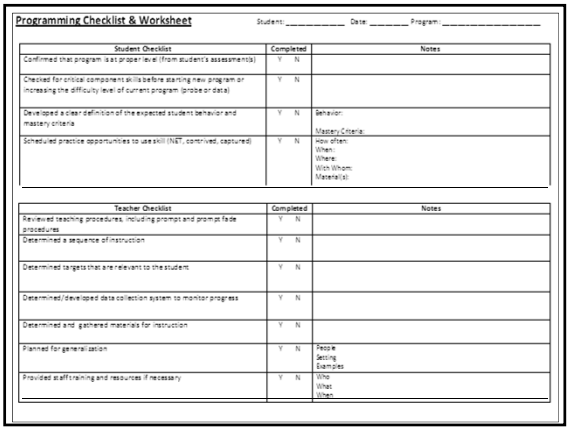
Category of eligibility: Autism



Damon Programming:

- Mand Frequency
- Mand for Information
- Peer to Peer Mand
- Social Skills Training
- Intraverbal skills (imbedded in social skills training)
- SRA Reading Mastery Level 2
- Saxon Math 1 Program





Programming Checklist & Worksheet

Student: _____ Date: _____ Program: _____

Student Checklist	Completed	Notes
Confirmed that program is at proper level (from student's assessment(s))	Y N	
Checked for critical component skills before starting new program or increasing the difficulty level of current program (probe or data)	Y N	
Developed a clear definition of the expected student behavior and mastery criteria	Y N	Behavior: Mastery Criteria:
Scheduled practice opportunities to use skill (NET, contrived, captured)	Y N	How often: When: Where: With Whom: Material(s):

Teacher Checklist	Completed	Notes
Reviewed teaching procedures, including prompt and prompt fade procedures	Y N	
Determined a sequence of instruction	Y N	
Determined targets that are relevant to the student	Y N	
Determined/developed data collection system to monitor progress	Y N	
Determined and gathered materials for instruction	Y N	
Planned for generalization	Y N	People Setting Examples
Provided staff training and resources if necessary	Y N	Who What When

Prior to New Program Selection:

- Issue of response adduction
- Probe for skill acquisition without specific teaching

Thank You for Your Participation!

Contact Information

Mike Miklos
mmiklos@pattan.net

Amiris DiPuglia
adipuglia@pattan.net

www.pattan.net

pennsylvania
DEPARTMENT OF EDUCATION
Bureau of Special Education
Pennsylvania Training and Technical Assistance Network

Commonwealth of Pennsylvania
Tom Corbett, Governor

Pennsylvania Department of Education
Ronald J. Tomalis, Secretary

Carolyn C. Dumaresq, Ed. D., Deputy Secretary
Office of Elementary and Secondary Education

John J. Tommasini, Director
Bureau of Special Education

Patricia Hozella, Assistant Director
Bureau of Special Education