RBT ONLINE TRAINING COURSE

RBT® Section A: Measurement Part 1

The Science and Driving-Force of Applied Behavior Analysis (ABA)

Special Learning, Inc.
Autism Education for Parents, Teachers, and Therapists

RBT® Task List Item(s) Addressed

This training program is based on the RBT Task List (2nd ed.) and is designed to meet the 40-hour training requirement for RBT certification. The program is offered independent of the BACB.

RBT® Task List Item	Item Description
A-01	Prepare for data collection.
A-02	Implement continuous measurement procedures (e.g., frequency, duration).
A-03	Implement discontinuous measurement procedures (e.g., partial & whole interval, momentary time sampling).
A-04	Implement permanent product recording procedures.

Measurement:
Data Collection and Continuous Measurement Procedures

Objectives & Learning Outcomes

This training program is based on the RBT Task List (2nd ed.) and is designed to meet the 40-hour training requirement for RBT certification. The program is offered independent of the BACB.

RBT® Task List Item	Objective
A-01	Learn to identify what materials are required to complete data collection across different programs and how-to set-up a session for success by accurately organizing for data collection.
A-02	Learn to discriminate different continuous measurement procedures and how-to implement such procedures.

Ultimate Learning Outcome (s)
➢ Demonstrate understanding of the importance of data collection ➢ Discuss ways to prepare for data collection (A-01) ➢ Demonstrate understanding of continuous measurement procedures (A-02) ➢ Demonstrate competency in data collection for continuous measurement procedures (A-02, A-03)

What is Behavior?

- Behavior: "The activity of living organisms; human behavior includes everything that people do." (Cooper, Heron, & Heward, 2007).
  - **Must be:** observable and measurable
    - Example of behavior: writing on a worksheet, saying "please"
    - Non-examples of behavior: tired, anxious

- Will it pass The Dead Man's Test?
  - *If a dead man can do it, it isn't behavior* –Ogden Lindsley

The Dead Man's Test:

Let's Test Your Knowledge! ASR #1

- Raising hand ✓
- Jumping ✓
- Blown over by the wind ✗
- Saying "please" ✓
- Non-responsive ✗
- Blinking ✓
- Falling down the stairs ✗
- Receiving tokens ✗

What is Data Collection?

- Data can be collected for any *behavior* that is observable and measurable

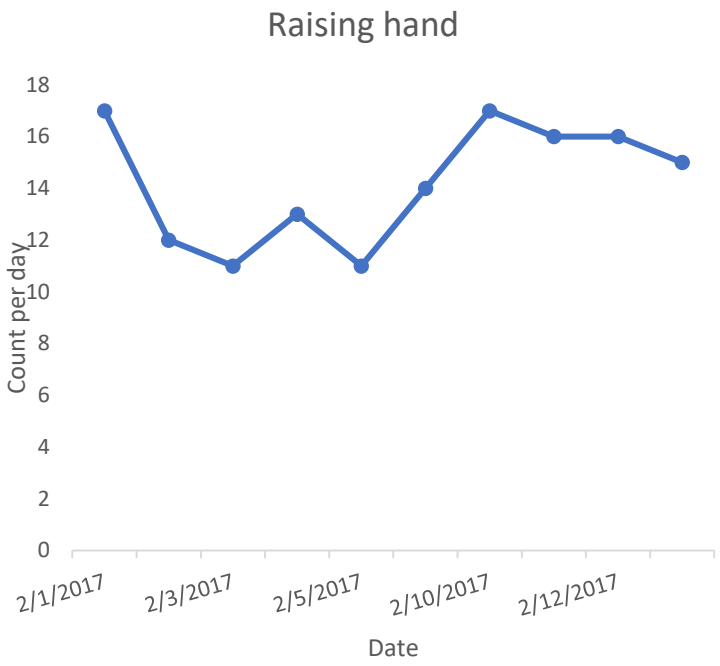
- We take data on a variety of things, including behaviors we want to increase, behaviors we want to decrease, and behaviors we want to maintain.

- Common examples:
  - Requesting to use restroom
  - Self-dressing
  - Greeting peers
  - Throwing items
  - Leaving the classroom
  - Screaming

Why Take Data?

- ABA is driven by data
- Data are a decision-making tool, both for behaviors to increase and behaviors to decrease
  - Otherwise, how do you *really* know?
- Data are displayed using charts and graphs, then analyzed to determine the effectiveness of an intervention program
- May seem tedious at times– this is normal!
  - There are ways to simplify, but the importance of data should still be evident
- Necessary for ethical practice
- RBTs® must learn to properly take data and demonstrate discipline required to collect and use data in an appropriate manner

The Need for Measurement



- To evaluate the effects of a behavioral intervention, data need to be collected and analyzed
  - Baseline
  - During intervention
  - Post-intervention
- Again, a guide for decision making in ABA
  - ABA is a *science*
- To prevent mistakes
  - Continue effective treatment
  - Discontinue ineffective treatment

Trustworthy Measurement

- Data must be trustworthy to guide interventions appropriately and ethically
- Indicators of trustworthy measurement:
  - Accuracy
  - Reliability
  - Validity

Trustworthy Measurement (*continued*)

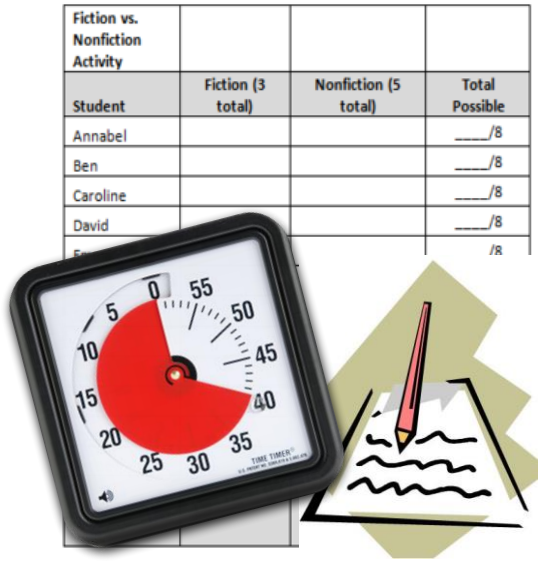
- **Accuracy**
  - Observed values match the true values of an event
    - (i.e. hit 3 times, marked 3 tallies)

- **Reliability**
  - Measurement yields the same values across repeated measurement of the same event

- **Validity**
  - Directly measures a socially significant behavior
  - Measures a dimension of the behavior relevant to the question
  - Ensures the data are representative

Prepare for Data Collection (A-01)

- To maximize efficiency and accuracy when taking data, it's important to prepare
- Before collecting data, be sure to review operational definitions of the behavior(s) you are collecting data on
  - Ask your supervisor if you have *any* questions
- Do you have the necessary tools?
  - Timer
  - Counter
  - Data sheet
  - Pen/pencil
  - Electronic Device

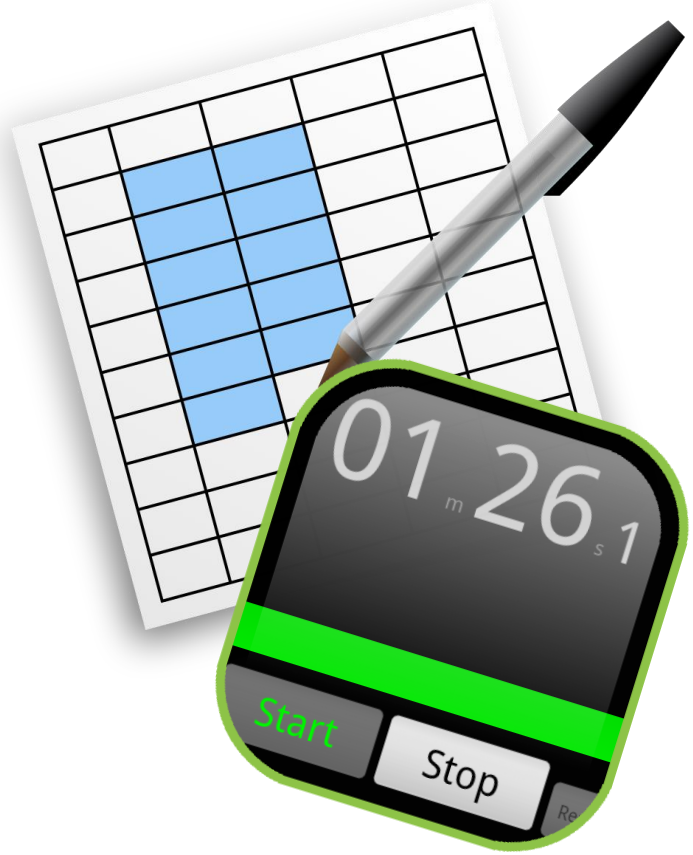


Prepare for Data Collection (*Continued*)

- When you're prepping your session/day/class, develop a method
  - Taking data on a clipboard- gather necessary data sheets and place on clip board
  - Using a binder- have relevant data sheets easily accessible
  - Using technology- be logged into the program and have necessary items readily available
  - Transferring data
    - Using a black/white board in class
    - Tape on leg
    - From a timer or counter
    - …..things to consider
- Develop a system that is going to be manageable

Continuous Measurement Procedures

- **Count**
- **Frequency/Rate**
- **Duration**
- **Response latency**
- **Inter-response time**



- Continuous measurement is measurement conducted in a manner such that all instances of the response class(es) are detected during the observation period (Johnston & Pennypack, 1993a)
- When analyzing data, it is the most ideal form of measurement

Frequency

- Measurement of the **number** of **times** of a behavior occurs during an observation period
  - How many times did the behavior occur?
  - Unit of time should be referenced

- Often used interchangeably with rate

- Not the same as count, which is simply a tally of the number of occurrences of a behavior, not always referencing time (Cooper, Heron, & Heward, 2007)

Frequency (*Continued*)

- Used for behaviors with a clear beginning and end. Examples include:
  - Requests
  - Hitting
  - Elopement
  - Raising hand
  - Words read

- Not ideal to use a frequency for:
  - Behaviors without a clear beginning and end, such as humming
  - Behaviors with a very short inter-response time, such as hand flapping
  - Behaviors lengthy in duration

How to Track Frequency

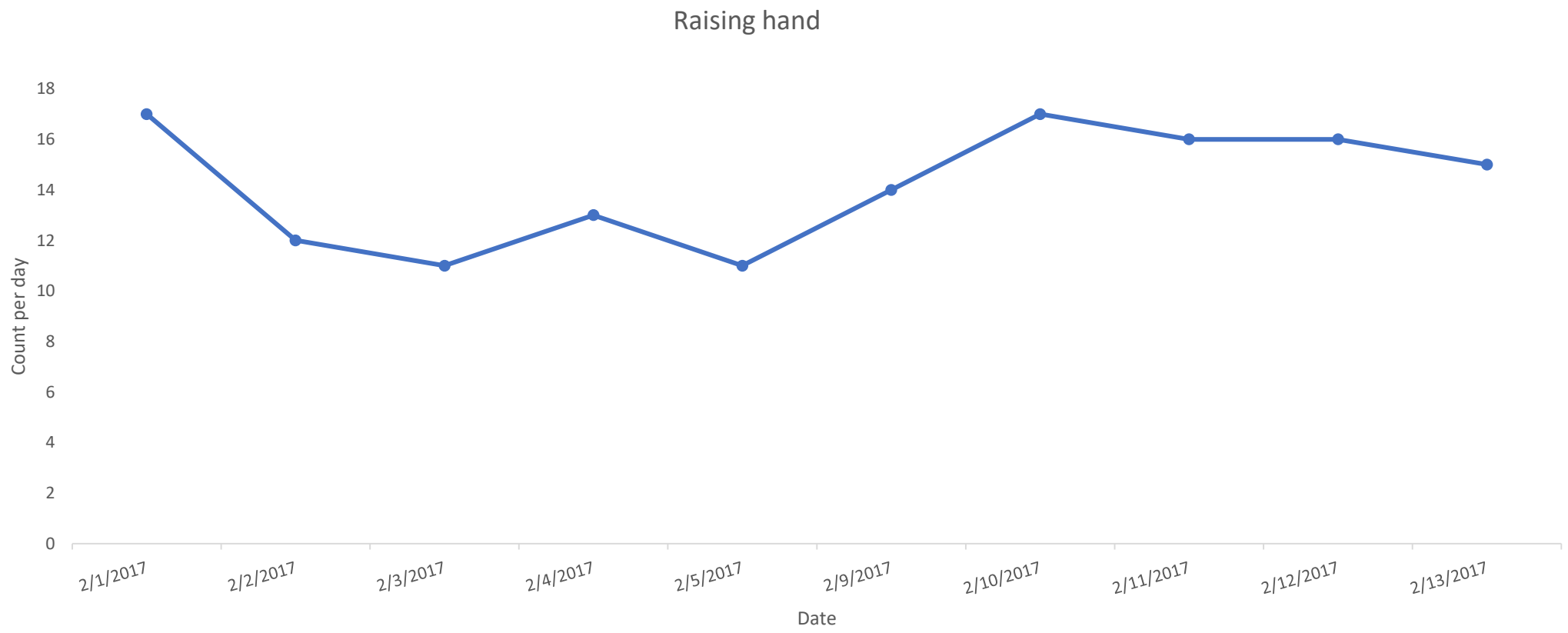
- Method of data collection:
  - Paper and pencil
  - Hand tally digital counters
  - Wrist counters
  - Masking tape
  - Markers (pennies, buttons, paperclips)
  - Pocket calculators

- Always think about manageability:
  - Environmental challenges
  - Severity of challenging behavior
  - Find a system that works for you!

Frequency Data Sheet Sample

Date:	8:30-10	10-11:30	11:30-1	1-2	2-3	Total
Hitting (frequency)	lll	0	l	llll	0	8
Elopement (frequency)	l	l	0	l	0	3

Frequency Graph



Your Turn! ASR #2

Date:	8:30- 10 am
Clapping – bringing two palms together creating sound or not (frequency)	

Let's Check the Reliability of Data Collection!

Date:	8:30- 10 am
Clapping – bringing two palms together creating sound or not (frequency)	𝍸 𝍸 𝍸 II

Rate

- Ratio consisting of: The count (number of responses) and time (observation period in which the count was obtained (Cooper, Heron, & Heward, 2007).
- Again, used interchangeably with *frequency* in behavior analysis literature → Rate=Frequency
- Observation period can be seconds, minutes, hours, day, week, month, year, etc.
- Rate is commonly used in Precision Teaching
- Another common application is a total frequency count per day
  - We have standard hourly days
- When you convert count to frequency/rate, it makes measurement more meaningful (Cooper, Heron, & Heward, 2007).

Rate Examples

- A session is 3 hours, and during his session, Billy scratched himself 6 times.
  - What's the rate of scratching?
  - (number of occurrences/observation period)
  - 6/3 = 2 scratching self behaviors per hour
- Anna read 95 words correctly and 4 words incorrectly in one minute.
  - What's the rate of correct responses?
  - (number of occurrences/observation period)
  - 95/1 = 95 words read accurately per minute
- Sam had 14 talk-outs (speaking out of turn or not being called upon by teacher) in 30 minutes
  - What's the rate of talk-outs?
  - (number of occurrences/observation period)
  - 14/30 = .47 talk-out behavior per minute

Duration

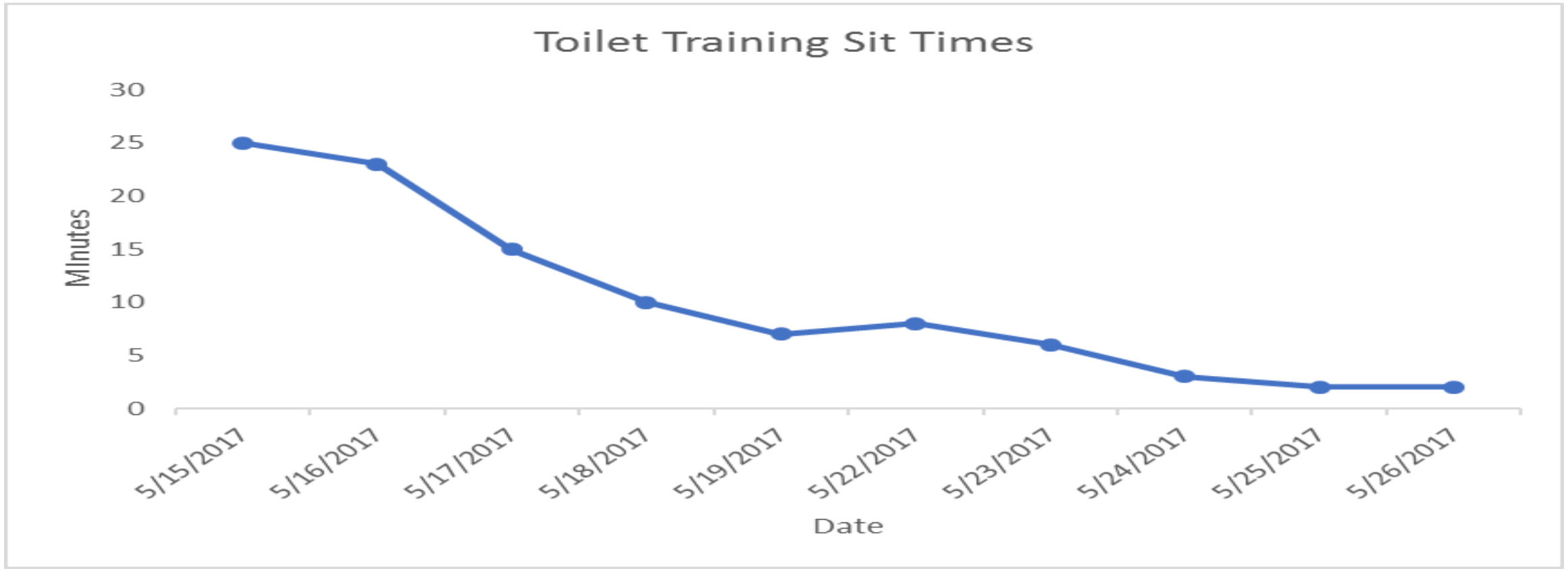
- The amount of time in which behavior occurs (Cooper, Heron, & Heward, 2007, pg. 70)
- Typically used if the person is engaging in a target behavior for too long or for too short of a time period
- Appropriate to measure duration when behaviors occur at very high rates or task-oriented continuous measurement behaviors that occur for an extended period of time (e.g, on-task behavior, off-task behavior) (Cooper, Heron, & Heward, 2007)
- Can use a stop watch or timer (that counts up) to track duration

Duration Data Sheet Sample

Date:	8:15-8:45	8:45-9:55	9:55-11:10	11:10-12:20	12:20-1:20	1:20-2:20	2:20-2:45	Total
Sit Times (Duration)								

Toileting sit times (duration) defined as sitting on the toilet (placing bottom on toilet seat over receptacle), either initiated by student or staff.

Duration Graph



Your Turn! ASR #3: Duration

Response Latency

- Commonly just called latency
- The measurement of the elapsed time between the onset of a stimulus and the initiation of a subsequent response (Cooper, Heron, & Heward, 2007, pg. 80).
- For example, how long does it take for someone to start a task after being given directions?
- Can use a stop watch or timer to track latency

What's the Latency?

- Mia's mom tells her to get started cleaning her room, and 15 minutes later, Mia starts cleaning her room and it takes her 45 minutes to finish.
  - What's the latency?
  - 15 minutes

- The teacher places AJ's math worksheet on his desk. He starts working on the worksheet with 30 seconds, taking him about 5 minutes to complete.
  - What's the latency?
  - 30 seconds

Your Turn! ASR #4: Response Latency

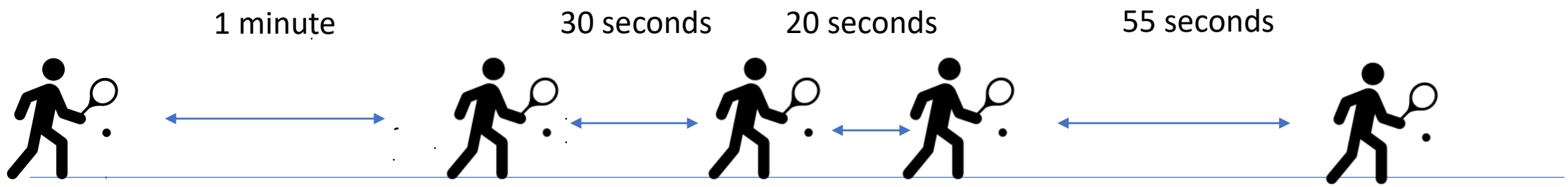
Directive	Latency

Let's Check the Reliability of Data Collection!

Directive	Latency
1.) Stand-up	3 seconds
2.) Jump	7 seconds
3.) Sit-down	11 seconds

Inter-Response Time (IRT)

- The amount of time that elapses between two consecutive instances of a response class (Cooper, Heron, & Heward, pg. 80)
- For example, John cleans a cafeteria table. It takes him 10 minutes to begin cleaning another. The IRT would be 10 minutes
- Shorter IRT times are related to higher rates of responding
- Let's review the example below:



Your Turn! ASR #5: IRT

Clap #	Time	IRT

Clap #	Time	IRT

Let's Check the Reliability of Data Collection!

Clap #	Time	IRT
1	02:38	0 seconds
2	03:15	.32 seconds
3	03:71	.56 seconds
4	04:83	1.12 seconds
5	05:89	1.06 seconds
6	06:74	.85 seconds
7	15:14	8.4 seconds
8	15:61	.47 seconds

Clap #	Time	IRT
9	16:68	1.07 seconds
10	17:08	.40 seconds
11	17:48	.40 seconds
12	17:96	.48 seconds
13	20.81	2.85 seconds
14	21:29	.48 seconds
15	22.86	1.57 seconds
16	27.15	4.29 seconds
17	27.83	.68 seconds

Continuous Measurement Summary

- Measurement is imperative to ABA as it guides our science
- Data are graphed and analyzed
- Coming up with a manageable system to data collection will lead to better outcomes
- There are various types of continuous measurement systems, such as frequency/rate, duration, latency and IRT

Measurement:
Discontinuous Measurement Procedures and Permanent Products

Measurement- Review

- In review, you've learned the importance of measurement
  - ABA is science-based and is driven by data
  - The data you collect is VERY useful and guides decision making

- You learned about the need to create a data collection method
  - Do what is manageable while still being able to collect accurate data
  - Develop a method, such as a binder, clipboard or electronic device system

- And lastly, you learned about different continuous measurement systems
  - Frequency/Rate, Duration, Latency and Inter-response time

Discontinuous Measurement Procedures

- Discontinuous measurement describes any form of measurement in which some instances of the response class(es) of interest may not be detected.
  - Consideration– may yield artifacts (something appears to exist because of the way it was measured)

- Used in applied behavior analysis when resources or conditions do not allow for continuous measurement
  - Example includes measuring the behavior of multiple students
  - Setting/environment examples include the classroom

Time Sampling

- Time sampling includes a variety of methods that record behaviors during specific time intervals or periods of time
- You record either the *presence* or *absence* of the target behavior
- Used when you cannot continuously observe a target behavior
- Data can still be useful in decision making
- There are three types of time sampling used in ABA:
  - Whole-Interval Recording
  - Partial-Interval Recording
  - Momentary Time Sampling

Whole-Interval Recording

- It's use:
  - When behaviors are continuous
  - When behaviors are occurring at high rates that it's difficult to tell one response from another, but can tell if the behavior is present or absent
- How to use:
  - Divide your observation period into brief time intervals (common interval times include 5 seconds and 10 seconds)
  - Record if the target behavior occurred *throughout* the interval– must occur during the **entire interval** to be recorded
    - Did the behavior occur during the entire interval?

Whole-Interval Recording Example

10 second interval	Student 1	Student 2	Student 3
1	Yes/No	Yes/No	Yes/No
2	Yes/No	Yes/No	Yes/No
3	Yes/No	Yes/No	Yes/No
4	Yes/No	Yes/No	Yes/No

Target behavior: Cooperative Play
Date:
Observer:

Whole-Interval Recording (*Continued*)

- You calculate a percentage of how many intervals the behavior occurred (how many times we scored yes on the previous example)
  - (# of intervals behavior occurred throughout)/(total # of intervals)
  - Student 1= 3/4 = 75%
  - Student 2= 2/4 = 50%
  - Student 3= 1/4 = 25%
- Considerations:
  - Tends to **underestimate** the behavior
  - If your interval is 10 seconds, and the behavior only occurred during 9 of those seconds, the interval would not be scored (or marked "no" that the behavior did not occur)
  - Basically, the only time that you record that "yes" the behavior occurred is when the **behavior happened for the entire interval period!**

Your Turn! ASR #6: WIR

Behavior:	Clapping	
0-10 sec.	Y	N
11-20 sec.	Y	N
21-30 sec.	Y	N
31-40 sec.	Y	N
41-50 sec.	Y	N
51-60 sec	Y	N

Let's Check the Reliability of Data Collection!

Behavior:	Clapping	
0-10 sec.	Y	N
11-20 sec.	Y	N
21-30 sec.	Y	N
31-40 sec.	Y	N
41-50 sec.	Y	N
51-60 sec	Y	N

Partial-Interval Recording

- It's use:
  - Not concerned with how many times or for how long a behavior occurs
  - Makes it possible to measure multiple behaviors at one time

- How to use:
  - Divide your observation period into brief time intervals
  - Record if the target behavior occurred *any time during* the interval
    - Did the behavior occur?

Partial-Interval Recording (*Continued*)

- As with WIR, you calculate a percentage of how many intervals the behavior occurred

- Considerations:
  - Tends to **overestimate** the behavior
  - If your interval is 10 seconds, and the behavior only occurred during 3 of those seconds, the interval **would** be scored (or marked "yes" that the behavior occurred)
  - Basically, if the target **behavior occurred at any point during the interval**, it is counted as "yes" the behavior happened!
  - Doesn't provide information about how long behavior occurred

Partial-Interval Recording Sample

	Monday		Tuesday		Wednesday		Thursday		Friday	
	TARGET BEHAVIOR		TARGET BEHAVIOR		TARGET BEHAVIOR		TARGET BEHAVIOR		TARGET BEHAVIOR	
	N/C	Elopement	N/C	Elopement	N/C	Elopement	N/C	Elopement	N/C	Elopement
810										
820										
830										
840										
850										
900										
910										
920										
930										
940										
950										

Your Turn! ASR #7: PIR

Behavior:	Clapping	
0-10 sec.	Y	N
11-20 sec.	Y	N
21-30 sec.	Y	N
31-40 sec.	Y	N
41-50 sec.	Y	N
51-60 sec	Y	N

Let's Check the Reliability of Data Collection!

Behavior:	Clapping	
0-10 sec.	Y	N
11-20 sec.	Y	N
21-30 sec.	Y	N
31-40 sec.	Y	N
41-50 sec.	Y	N
51-60 sec	Y	N

Momentary-Time Sampling

- It's use:
  - When the observer cannot attend continuously to the measurement
  - Behaviors that are occurring continuously (e.g., engagement with a task), but not for use with behaviors occurring at a low frequency

- How to use:
  - Divide your observation period into brief time intervals (e.g. 1 minute)
  - Record if the target behavior occurs ***at the end*** of the interval
    - The 1 minute timers goes off, is the behavior occurring?

(Cooper, Heron, and Heward, 2007)

Momentary-Time Sampling (*Continued*)

- As with the other time sampling methods, you calculate a percentage of how many intervals the behavior occurred

- Considerations:
  - Can **overestimate** and **underestimate**
  - If your interval is 10 seconds, and the behavior only occurred during 3 of those seconds, the interval **would** be scored (or marked "yes" that the behavior occurred)
  - Basically, at the last second of the interval, you will – look up at the student and document if the **behavior occurred or did not occur at that exact moment.**
  - Doesn't provide information about how long behavior occurred

Your Turn! ASR #8: Momentary Time Sampling

Behavior:	Clapping	
0-10 sec.	Y	N
11-20 sec.	Y	N
21-30 sec.	Y	N
31-40 sec.	Y	N
41-50 sec.	Y	N
51-60 sec	Y	N

Let's Check the Reliability of Data Collection!

Behavior:	Clapping	
0-10 sec.	Y	N
11-20 sec.	Y	N
21-30 sec.	Y	N
31-40 sec.	Y	N
41-50 sec.	Y	N
51-60 sec	Y	N

Comparison of Discontinuous Measurements

WHOLE INTERVAL RECORDING: 2 (Y) OUT OF 6 INTERVALS= 2/6→ 33.33%

Behavior:	0-10 sec.	11-20 sec.	21-30 sec.	31-40 sec.	41-50 sec.	51-60 sec
Clapping	(Y) N	(Y) N	Y (N)	Y (N)	Y (N)	Y (N)

PARTIAL INTERVAL RECORDING: 3 (Y) OUT OF 6 INTERVALS= 3/6→ 50%

Behavior:	0-10 sec.	11-20 sec.	21-30 sec.	31-40 sec.	41-50 sec.	51-60 sec
Clapping	(Y) N	(Y) N	(Y) N	Y (N)	Y (N)	Y (N)

MOMENTARY TIME-SAMPLING: 1 (Y) OUT OF 6 INTERVALS= 1/6→ 16.67%

Behavior:	0-10 sec.	11-20 sec.	21-30 sec.	31-40 sec.	41-50 sec.	51-60 sec
Clapping	Y (N)	(Y) N	Y (N)	Y (N)	Y (N)	Y (N)

Permanent Product

- Some behaviors can be measured *after* they occur by the effect(s) they had on the environment or the products they left behind
- Refers to the time of measurement (after the behavior occurred) and the medium (effect on the environment)
- Does not measure the behavior itself
- All methods described in our presentations (frequency, duration, time sampling) can be applied to the measurement of permanent product

(Cooper, Heron, and Heward, 2007)

Permanent Product (*Continued*)

- Permanent products are natural and important outcomes of a wide range of socially significant behavior in educational, vocational, domestic and community environments (Cooper, Heron, & Heward, 2007, pg. 96)

- Examples:
  - Math worksheets completed
  - Dishes put away
  - Tables cleaned
  - Puzzle pieces put together
  - Beds made
  - Spelling words written
  - Stamps on paper

Your Turn! ASR #9

Is it an example of permanent product?

- **Pennies in a jar** ✓
- **Footprints in the sand** ✓
- **Feeling hot** ✗
- **Grades on report card** ✓
- **Parent reports that the child made their bed** ✗

A-B-C Data Recording

- A- Antecedent (what happens **before** the behavior)
- B- Behavior (measure of interest: what does it look like?)
- C- Consequence (what happens **after** the behavior)
- Can provide helpful information for behavior analyst to analyze common patterns of antecedents and consequences
- RBT® writes narrative about what happened (or selects predetermined items, if applicable)

A-B-C Recording: Anecdotal

ABC Data Sheet

Special Learning

Date/ Initials and time start to finish	Antecedent (What was observed prior to the behavior: setting, people, activity, language)	Behavior (What was observed and frequency or duration)	Consequence (What happened immediately after the behavior occurred)	Child's Reaction to Consequence

A-B-C Recording: Coded

Antecedent, Behavior, and Consequence Form

Student: ___________ _______ **Circle One**: Mon Tue Wed Thurs Fri P age ________

Full day **Absent** **Partial day**: In _____ Out _______ Date: __________

Time (Begin-End)	Context/Activity	Antecedent/ Setting Events	Identified Target Behaviors	Consequence/ Outcome	Student Reaction	Staff Initials
KEY						
	A.	A. Transition	A.	A.	A. Stopped	
	B.	B. Denied Access	B.	B.	B. Continued	
	C.	C. Instruction/Directive	C.	C.	C. Intensified	
	D.	D. New Task		D.	D.	
	E.	E. Teacher Attention to others		E.	E.	
	F.	F. Told "NO"		F.	F.	
	G.	G. Waiting		G.	G.	
	H.	H.		H.	H.	
	I.	I.		I.	I.	
	J.	J.		J.	J.	
	K.	K.		K.	K.	

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A-B-C Sample: Frequency Data

Student Name: John
Target Behavior(s): Hitting any part of his body against another person or using an object to hit another person. Strikes and missed attempts will all count.

Functions: Medical, Escape, Access to Attention, Access to Tangibles, Sensory/Self-Stimulatory, Combination

Date/ Initials	Antecedent	Behavior	Consequence	Possible Function
2/12/17 TV	Teacher presented a math worksheet with 12 problems	John hit the teacher 3 times quickly	Teacher took the worksheet away	Escape
2/12/17 TV	Classmate was playing with train set	John hit the student twice	Student ran away and John played with the train set	Access
2/13/17 AF	John was given a book to read	John hit a peer with the book and attempted to hit the teacher with the book	The teacher sat with John and helped him read the book	Escape or Attention

A-B-C Sample: Duration Data

Student Name: John
Target Behavior(s): "Out of seat" behavior defined by times when John leaves his class group/assigned location. Examples: leaves desk during independent work time, leaves the rug during circle time, leaves gym during gym time, etc. Will not include times when John asks permission to change locations or uses a Break card.
Functions: Medical, Escape, Access to Attention, Access to Tangibles, Sensory/Self-Stimulatory, Combination

Date/ Initials	Antecedent	Behavior	Consequence	Possible Function
2/12/17 AF	Teacher presented a math worksheet with 12 problems	John ran to the window and stayed there for 7 minutes	Teacher brought John back and helped him with the worksheet	Escape
2/12/17 TV	Teacher was leading circle time	John went to sit at his desk and color. He missed the entire circle time which lasted for 15 minutes	John was ignored	Escape or Access
2/13/17 AF	John finished his lunch early	John left the cafeteria and went to the playground/recess. He remained there for 2 minutes before being brought back	John was brought back to the cafeteria to wait with his calls	Access or Escape
2/13/17 AF	Teacher was leading a classwide science lesson	John hid under his desk for 5 minutes	The teacher assigned a peer to sit with John and help him with the lesson	Escape

Task Analysis Data

- BCBA's ® use a task analysis to break larger goals into smaller skills for teaching purposes. For example, the goal of independently brushing teeth can be broken down into the smaller steps of:
  - Take out toothbrush and toothpaste
  - Turn on water and wet toothbrush, then turn water off
  - Open toothpaste, put a small amount onto the toothbrush, then close and put away
  - Brush top right teeth
  - Brush top left teeth
  - Brush lower left teeth
  - Brush lower right teeth
  - Turn on water, rinse brush and put away
  - Rinse mouth and turn off water
- These can even be broken down to even smaller steps if needed.
- When using a task analysis to teach, data are typically taken on the prompt level of each step, while some use a + or -

Task Analysis Data Sheet Sample #1

Jed **Program: BRUSH HAIR**

Step	Prompt Level	Date									
1. Gets brush											
2. Brushes hair **on RIGHT side**											
3. Brushes hair **in back**											
4. Switches brush to left hand											
5. Brushes **on LEFT side**											
6. Puts brush away											

Task Analysis Data Sheet Sample #2

TRIAL	1	2	3	4	5	6	7	8	9
Steps→	Turn on Water	Wet Hands	Put Soap on Hands	Rub Hands Back and Forth	Rinse	Turn off Water	Get Paper Towel	Dry Hands	Throw Towel in Trash
Assistance	I	I	I	I	I	I	I	I	I
	G/V	G/V	G/V	G/V	G/V	G/V	G/V	G/V	G/V
	PP	PP	PP	PP	PP	PP	PP	PP	PP
	FP	FP	FP	FP	FP	FP	FP	FP	FP
	R	R	R	R	R	R	R	R	R

Your Turn! ASR #10

TRIAL	1	2	3	4	5	6	7	8	9
Steps→	Turn on Water	Wet Hands	Put Soap on Hands	Rub Hands Back and Forth	Rinse	Turn off Water	Get Paper Towel	Dry Hands	Throw Towel in Trash
Assistance	I	I	I	I	I	I	I	I	I
	G/V	G/V	G/V	G/V	G/V	G/V	G/V	G/V	G/V
	PP	PP	PP	PP	PP	PP	PP	PP	PP
	FP	FP	FP	FP	FP	FP	FP	FP	FP
	R	R	R	R	R	R	R	R	R

Your Turn! ASR #9

Let's Check the Reliability of Data Collection!

TRIAL	1	2	3	4	5	6	7	8	9
Steps→	Turn on Water	Wet Hands	Put Soap on Hands	Rub Hands Back and Forth	Rinse	Turn off Water	Get Paper Towel	Dry Hands	Throw Towel in Trash
Assistance	I	I	I	I	I	I	I	I	I
	G/V	G/V	G/V	G/V	G/V	G/V	G/V	G/V	G/V
	PP	PP	PP	PP	PP	PP	PP	PP	PP
	FP	FP	FP	FP	FP				
	R	R	R	R	R				

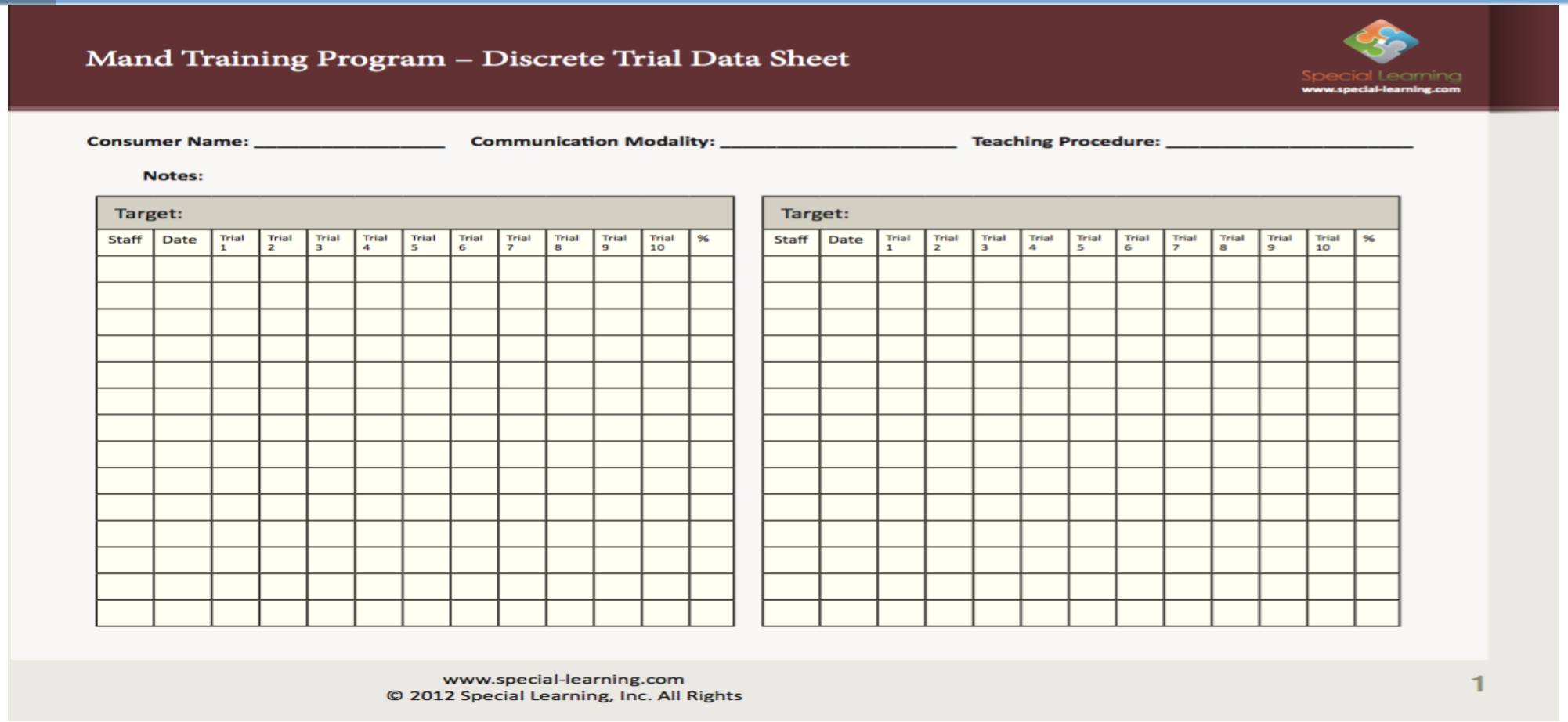
Discrete Trial (DTT) Data

- Discrete Trial data are a large part of ABA services and taking proper DT data is essential in any practice.
- DT data should be consistently taken for all programs.
- DT data can be taken by either trial by trial data or probe data.

Discrete Trial (DTT) Data (*Continued*)

- For students who require a lot of repetition and practice in order to master, maintain, and generalize a skill, trial data will be most beneficial.
- Trial by trial data also allows for accuracy of progress across single sessions.
- Using trial data means that you will record data for every trial you present to the student.
- Data can be recorded in the following ways:
  - + or -
  - I or P
  - Y or N
- At the end of each session, you would add up the total number of +/I/Y's. Typically you would then use the total to calculate the % correct for graphing purposes.

DTT Recording Sample #1



Mand Training Program – Discrete Trial Data Sheet

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Consumer Name: _____ **Communication Modality:** _____ **Teaching Procedure:** _____

Notes:

Target:												
Staff	Date	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	%

Target:												
Staff	Date	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	%

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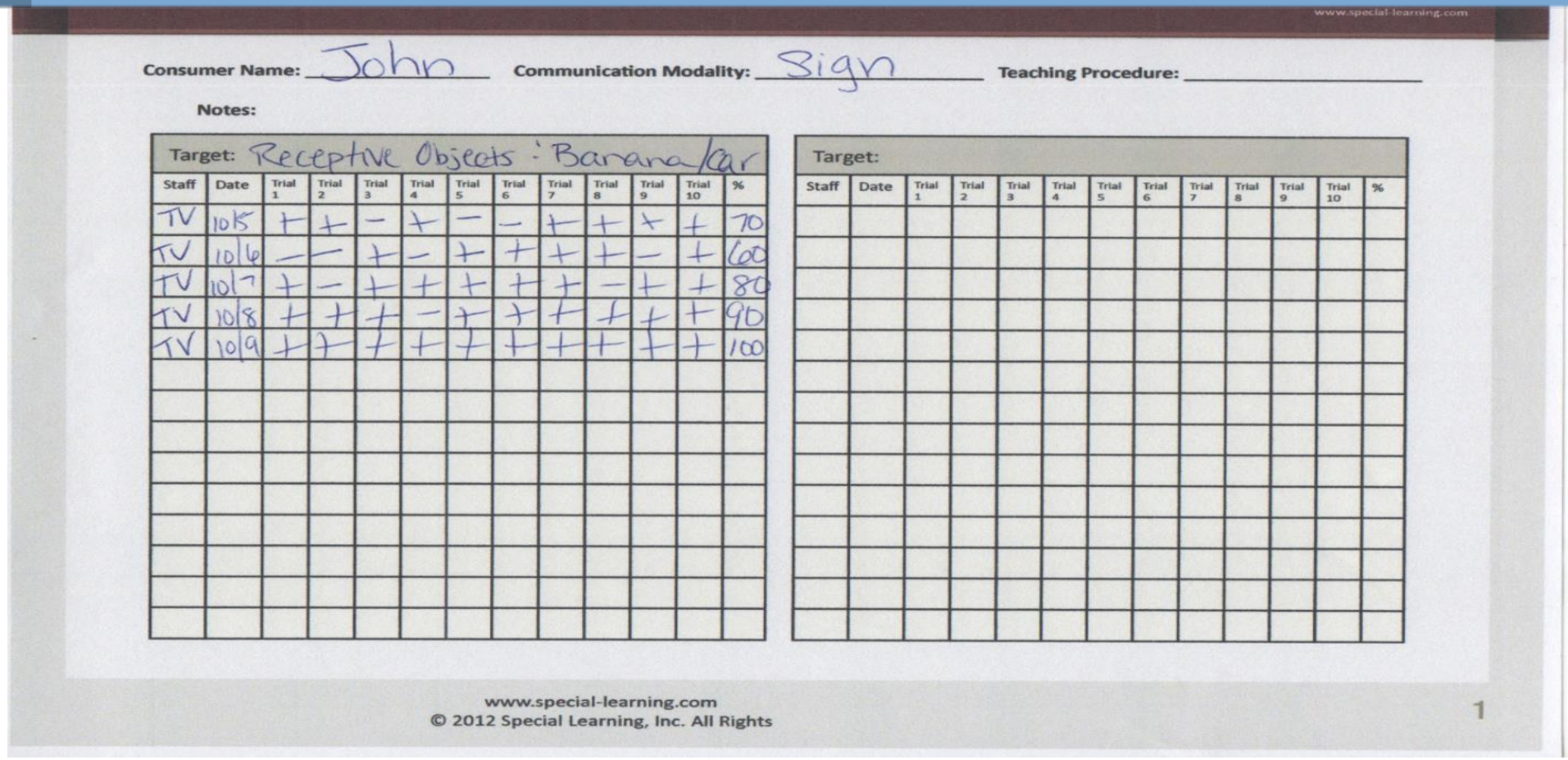
DTT Recording Sample #2



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Consumer Name: John Communication Modality: Sign Teaching Procedure: _____

Notes:

Target: Receptive Objects: Banana/Car

Staff	Date	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	%
TV	10/5	+	+	−	+	−	−	+	+	+	+	70
TV	10/6	−	−	+	−	+	+	+	+	−	+	60
TV	10/7	+	−	+	+	+	+	+	−	+	+	80
TV	10/8	+	+	+	−	+	+	+	+	+	+	90
TV	10/9	+	+	+	+	+	+	+	+	+	+	100

Target:

Staff	Date	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	%

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DT Probe Data

- First Response, or probe data collection method records only the first trial of a learning opportunity regardless how many discrete trials are conducted during the session.
- This method may be preferred for students who learn best in a naturalistic environment where limiting the practitioner to data collection stimuli would be counterproductive.
- This method does not allow for observation of progression throughout a single session.

Probe Data Sheet Sample #1

Discrete Trials Probe Data Sheet

SP:											Response:			
Stimulus Presented	P1		P2		P3		P4		P5		Percent Correct	Outcome		
	Trial Data	Date / Initials	Trial Data	Date / Initials	Trial Data	Date / Initials	Trial Data	Date / Initials	Trial Data	Date / Initials		Pre-Instruct.		Post-Instruct.
1.	C I		C I		C I		C I		C I		%	K U		RE-I M
2.	C I		C I		C I		C I		C I		%	K U		RE-I M
3.	C I		C I		C I		C I		C I		%	K U		RE-I M
4.	C I		C I		C I		C I		C I		%	K U		RE-I M
5.	C I		C I		C I		C I		C I		%	K U		RE-I M
6.	C I		C I		C I		C I		C I		%	K U		RE-I M
7.	C I		C I		C I		C I		C I		%	K U		RE-I M
8.	C I		C I		C I		C I		C I		%	K U		RE-I M
9.	C I		C I		C I		C I		C I		%	K U		RE-I M
10.	C I		C I		C I		C I		C I		%	K U		RE-I M
11.	C I		C I		C I		C I		C I		%	K U		RE-I M
12.	C I		C I		C I		C I		C I		%	K U		RE-I M
13.	C I		C I		C I		C I		C I		%	K U		RE-I M
14.	C I		C I		C I		C I		C I		%	K U		RE-I M
15.	C I		C I		C I		C I		C I		%	K U		RE-I M
16.	C I		C I		C I		C I		C I		%	K U		RE-I M
17.	C I		C I		C I		C I		C I		%	K U		RE-I M
18.	C I		C I		C I		C I		C I		%	K U		RE-I M
19.	C I		C I		C I		C I		C I		%	K U		RE-I M
20.	C I		C I		C I		C I		C I		%	K U		RE-I M

Probe Data Sheet Sample #2

Mand Training Program – First Trial Probe Data Sheet

Consumer Name: ____________________ Communication Modality: _________________________ Teaching Procedure: ________________________

Notes:

Target:			Target:			Target:			Target:		
Staff	Date	+ Ph V G M	Staff	Date	+ Ph V G M	Staff	Date	+ Ph V G M	Staff	Date	+ Ph V G M
		+ Ph V G M			+ Ph V G M			+ Ph V G M			+ Ph V G M
		+ Ph V G M			+ Ph V G M			+ Ph V G M			+ Ph V G M
		+ Ph V G M			+ Ph V G M			+ Ph V G M			+ Ph V G M
		+ Ph V G M			+ Ph V G M			+ Ph V G M			+ Ph V G M
		+ Ph V G M			+ Ph V G M			+ Ph V G M			+ Ph V G M
		+ Ph V G M			+ Ph V G M			+ Ph V G M			+ Ph V G M
		+ Ph V G M			+ Ph V G M			+ Ph V G M			+ Ph V G M
		+ Ph V G M			+ Ph V G M			+ Ph V G M			+ Ph V G M
		+ Ph V G M			+ Ph V G M			+ Ph V G M			+ Ph V G M

Summary

- Measurement and Data Collection are essential pieces to any ABA program
- Understanding how to take data on different types of skills and tasks will ensure proper progression of your students program.
- Consult frequently with the program supervisor to analyze the data and check for student progress.

ABA Terminology

- Direct Observation
- Indirect Observation
- Direct Measurement
- Indirect Measurement
- Continuous Recording
- Discontinuous Recording
- Frequency
- Rate
- Duration
- Latency
- Interval
- Level
- Variability
- Intensity
- Trial-by-trial Data
- Event Recording
- Momentary-time Sampling
- Whole Interval Recording
- Partial Interval Recording
- Permanent Product Recording
- Baseline
- Probe Data
- X-axis
- Y-axis
- Trend

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Thank You for Attending Special-Learning's

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- Learn to implement discontinuous data collection procedures
- Demonstrate mastery of accurate collection of discontinuous data practices
- Learn to create an ABA graph in Microsoft Excel™

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