

# Data Collection

Applied Behavior Analysis Part VIII  
WEST ORANGE COUNTY CONSORTIUM FOR SPECIAL EDUCATION  
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## Why take data?

- Data is the process of recording information regarding behaviors
  - Behaviors that we may want to see increased
  - Behaviors that we may want to see decreased
- Foundation for making decisions regarding a student's behavior intervention plan or strategies being used
- It is analyzed by a credentialed teacher/psych to determine if progress is being made
- Decisions about interventions/strategies/plan are continued or modified depending upon progress

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- Important to define the target behavior data will be taken on: it must be observable , measureable, and specific
- Remember that there should be 5 occurrences

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## Two Types of Data Collection

- Continuous
  - Measures every occurrence of a behavior
  - Requires constant observation of the student
  - Most accurate
  - Most difficult to do due to the time and staff it takes
  - Continuous types of data include:
    - Frequency/Rate
    - Duration

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- Discontinuous
  - Measures a sample of behaviors
  - Easier to use in a busy environment
  - Able to track high frequency of behaviors
  - Provides only an estimate of the behavior
  - Involves over and under estimation, so data must be analyzed carefully
  - Discontinuous types of data include:
    - Partial interval
    - Whole interval
    - Time sampling

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## Frequency/Rate

- Counting and recording the number of times a behavior happens within a specific time frame
- Only useful for events with a distinct beginning and end (i.e., number of times a student bangs her head within an hour)
- Should only be used to measure behaviors you can accurately count and last only a short time

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- When using frequency data:
  - Set up a time frame when you will be measuring the behavior (i.e., minutes, hours, days)
  - Note time when behavior first happens
  - Tally each time the behavior occurs from the start to the end of the time frame
- <https://youtu.be/boXRSE6Jb8M>
- [https://youtu.be/Ob\\_iMyPvmc](https://youtu.be/Ob_iMyPvmc)

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**Frequency Data Sheet**

Student: Mark S. Week: 10/2 - 10/6

Behavior: calling out without raising hand during small + large group instruction

Time/Activity	Monday	Tuesday	Wednesday	Thursday	Friday
Reading			<del>    </del>		<del>    </del>
Math					
Social Studies			<del>    </del>		
Writing					<del>    </del>
Science	<del>    </del>	<del>    </del>			
Other	<del>    </del>	<del>    </del>	<del>    </del>		(group instruction)
total =	9	12	3	8	5
					<del>37</del>

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# Duration

- Measures how long a specific behavior lasts
- Useful for behaviors that last a longer period of time (i.e., 30 minute 'tantrum')
- When using duration data
  - Note the time the behavior starts
  - Note the time the behavior ends
- <https://youtu.be/36oqgfRAeUw>

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**DURATION DATA SHEET**

Student \_\_\_\_\_ Week: From \_\_\_\_\_ To \_\_\_\_\_

Observer \_\_\_\_\_

Behavior \_\_\_\_\_

Monday		Tuesday		Wednesday		Thursday		Friday	
Date:	Duration:	Date:	Duration:	Date:	Duration:	Date:	Duration:	Date:	Duration:
Start:		Start:		Start:		Start:		Start:	
End:		End:		End:		End:		End:	
Start:		Start:		Start:		Start:		Start:	
End:		End:		End:		End:		End:	
Start:		Start:		Start:		Start:		Start:	
End:		End:		End:		End:		End:	
Start:		Start:		Start:		Start:		Start:	
End:		End:		End:		End:		End:	
Start:		Start:		Start:		Start:		Start:	
End:		End:		End:		End:		End:	
Start:		Start:		Start:		Start:		Start:	
End:		End:		End:		End:		End:	
Start:		Start:		Start:		Start:		Start:	
End:		End:		End:		End:		End:	
Start:		Start:		Start:		Start:		Start:	
End:		End:		End:		End:		End:	

**Avg Duration:** \_\_\_\_\_

Average Duration: Sum the total durations from each episode and divide by the total number of episodes.

**% of Observation With Behavior:** \_\_\_\_\_

% of Observation with Behavior (# of Minutes of Behavior divided by total # of minutes of observation, then multiply by 100)

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## Interval

- The observation window is split into intervals of time
- Data is collected on whether or not a behavior occurred during that interval of time
- This may not be the most accurate data collection system, but it is easy to use when there may be time constraints
- Using interval
  - Split up the observation window (i.e., 1 class period) into smaller intervals of time (i.e., 1 minute)
  - Record if the behavior occurred during that smaller interval
  - <https://youtu.be/N4gx-TBwM5Q>

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Time	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:	Date:
9:00-9:30										
9:30-10:00										
10:00-10:30										
10:30-11:00										
11:00-11:30										
11:30-12:00										
12:00-12:30										
12:30-1:00										
1:00-1:30										

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- Partial Interval
  - Break time into equal parts (i.e., 20 minute small group time into four 5 minute time intervals)
  - Note if the behavior occurred at any time during each interval
  - Since the behavior only needs to occur once during the interval for it to be recorded this method overestimates the occurrences of the behavior
  - The larger/longer the intervals the more inflated the data will become
  - Useful if behavior has clear beginning and ending
  - Useful if behavior occurs at high frequency, but not the entire duration of an interval

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- Whole interval
  - Break time into equal parts/time intervals
  - Record if the behavior occurred throughout the entire time interval
  - Underestimates the occurrence of the behavior because the behavior has to occur for the entire interval of time
  - Usually used for behaviors you want to see for longer periods of time (i.e., how long student is sitting and remaining at their desk during independent work)

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## Time Sampling

- Takes a snapshot of whether or not the behavior is occurring at that time
- Using time sampling
  - Break up time into smaller intervals of time (i.e., 15 minutes)
  - When the time interval ends, record whether or not the behavior was occurring at that time-the end of the interval

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## Other Types of Data Collection Methods

- These other types may be used to capture missed information
- Usually used for more specific purposes

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## Latency

- Measures the time it takes a behavior to occur once a cue is given (i.e., measuring how long it takes a student to put his hands down when given the verbal cue, “hands down”)
- Using latency data
  - Issue the cue
  - Record the time it takes for the behavior to begin once the cue is delivered

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### Latency Recording Observation Form

Student's Name: \_\_\_\_\_

Teacher's Name: \_\_\_\_\_

Observer: \_\_\_\_\_

Date: \_\_\_\_\_

Time Period: \_\_\_\_\_

Behavior Stimulus: \_\_\_\_\_

Target Behavior: \_\_\_\_\_

Time of Stimulus	Elapsed Time Before Behavioral Response				Number of Prompts Needed
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	
	< 30 s.	30 s.-2 min.	2-5 min.	> 5 min.	

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## Antecedent-Behavior-Consequence (ABC)

- Qualified data
- Measures the cause and effect of a behavior
- Looks at the antecedents (before), behavior (s), and then the consequences
- Used to find correlations/relationships between the antecedents, behaviors, and consequences
- Used to develop a hypothesis
- Using ABC data
  - Takes time and a keen eye

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- Student data is being collected and must be continuously monitored closely
- When a behavior occurs, must note what happened right before (the trigger), the behavior, and what happened immediately following (consequence)
- <https://youtu.be/74Nn3DQOrtA>

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**ABC CHART**

Student Name: \_\_\_\_\_ School: \_\_\_\_\_ Grade: \_\_\_\_\_ Observer(s): \_\_\_\_\_

**Instructions:** For each instance of behavior, record the context of the behavior (date, time, designated activity, people involved, location, etc.). Also, briefly describe the antecedent, behavior, and consequence. Based on the observation of the behavior, determine a possible function of the behavior (e.g., seek attention, escape/avoid task, leave an area or person, access a preferred item, sensory consequence, avoid interruptions, communication pain/illness, etc.).

	Antecedent: What happened immediately before the behavior?	Behavior: Describe the behavior in observable terms (e.g., kicked a peer)	Consequence: What happened immediately after the behavior?	Possible Function: What is the "payoff"? Why is the behavior happening?
Date: Time: Activity: People: Place:				
Date: Time: Activity: People: Place:				
Date: Time: Activity: People: Place:				
Date: Time: Activity: People: Place:				

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**A-B-C Checklist**

Student Name: \_\_\_\_\_ School: \_\_\_\_\_

Class: \_\_\_\_\_

**Behavior of Concern:** \_\_\_\_\_

Date:	Time:	Location/Setting:
<b>Antecedent (before behavior)</b>	<b>Behavior</b>	<b>Consequences (after behavior)</b>
<input type="checkbox"/> Given direction/task/activity <input type="checkbox"/> Asked to wait <input type="checkbox"/> New task/activity <input type="checkbox"/> Difficult task/activity <input type="checkbox"/> Preferred activity interrupted <input type="checkbox"/> Activity/Item denied (told "no") <input type="checkbox"/> Loud, noisy environment <input type="checkbox"/> Given assistance/correction <input type="checkbox"/> Transition between locations/activities <input type="checkbox"/> Attention given to others <input type="checkbox"/> Presence of specific person <input type="checkbox"/> Attention not given when wanted <input type="checkbox"/> Left alone (no indiv. attention) <input type="checkbox"/> Left alone (no approp. activity) Other: _____	<input type="checkbox"/> Refusing to follow directions <input type="checkbox"/> Making verbal threats <input type="checkbox"/> Disrupting class (describe) <input type="checkbox"/> Crying/whining <input type="checkbox"/> Screaming/yelling <input type="checkbox"/> Scratching <input type="checkbox"/> Biting <input type="checkbox"/> Spitting <input type="checkbox"/> Kicking <input type="checkbox"/> Flopping <input type="checkbox"/> Running away/holding <input type="checkbox"/> Destroying property <input type="checkbox"/> Flipping furniture <input type="checkbox"/> Hitting Self <input type="checkbox"/> Hitting Others <input type="checkbox"/> Verbal Refusal Other: _____	<input type="checkbox"/> Verbal redirection <input type="checkbox"/> Physical assist/prompt <input type="checkbox"/> Ignored problem behavior <input type="checkbox"/> Kept demand on <input type="checkbox"/> Used proximity control <input type="checkbox"/> Verbal reprimand <input type="checkbox"/> Removed from activity/location <input type="checkbox"/> Given another task/activity <input type="checkbox"/> Interrupted blocked and redirected <input type="checkbox"/> Left alone <input type="checkbox"/> Isolated within class <input type="checkbox"/> Loss of privilege <input type="checkbox"/> Calming/soothing: verbal/physical/both <input type="checkbox"/> Peer remarks/laughter <input type="checkbox"/> Time-out (duration) Other: _____
<b>Duration:</b> <1 min _____ 1-5 min _____ 5-10 min _____ 10-30 min _____	<b>Intensity:</b> Low _____ Medium _____ High _____	<b>Observer:</b> Notes: _____

  

Date:	Time:	Location/Setting:
<b>Antecedent (before behavior)</b>	<b>Behavior</b>	<b>Consequences (after behavior)</b>
<input type="checkbox"/> Given direction/task/activity <input type="checkbox"/> Asked to wait <input type="checkbox"/> New task/activity <input type="checkbox"/> Difficult task/activity <input type="checkbox"/> Preferred activity interrupted <input type="checkbox"/> Activity/Item denied (told "no") <input type="checkbox"/> Loud, noisy environment <input type="checkbox"/> Given assistance/correction <input type="checkbox"/> Transition between locations/activities <input type="checkbox"/> Attention given to others <input type="checkbox"/> Presence of specific person <input type="checkbox"/> Attention not given when wanted <input type="checkbox"/> Left alone (no indiv. attention) <input type="checkbox"/> Left alone (no approp. activity) Other: _____	<input type="checkbox"/> Refusing to follow directions <input type="checkbox"/> Making verbal threats <input type="checkbox"/> Disrupting class (describe) <input type="checkbox"/> Crying/whining <input type="checkbox"/> Screaming/yelling <input type="checkbox"/> Scratching <input type="checkbox"/> Biting <input type="checkbox"/> Spitting <input type="checkbox"/> Kicking <input type="checkbox"/> Flopping <input type="checkbox"/> Running away/holding <input type="checkbox"/> Destroying property <input type="checkbox"/> Flipping furniture <input type="checkbox"/> Hitting Self <input type="checkbox"/> Hitting Others <input type="checkbox"/> Verbal Refusal Other: _____	<input type="checkbox"/> Verbal redirection <input type="checkbox"/> Physical assist/prompt <input type="checkbox"/> Ignored problem behavior <input type="checkbox"/> Kept demand on <input type="checkbox"/> Used proximity control <input type="checkbox"/> Verbal reprimand <input type="checkbox"/> Removed from activity/location <input type="checkbox"/> Given another task/activity <input type="checkbox"/> Interrupted blocked and redirected <input type="checkbox"/> Left alone <input type="checkbox"/> Isolated within class <input type="checkbox"/> Loss of privilege <input type="checkbox"/> Calming/soothing: verbal/physical/both <input type="checkbox"/> Peer remarks/laughter <input type="checkbox"/> Time-out (duration) Other: _____
<b>Duration:</b> <1 min _____ 1-5 min _____ 5-10 min _____ 10-30 min _____	<b>Intensity:</b> Low _____ Medium _____ High _____	<b>Observer:</b> Notes: _____

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## Scatterplot

- Draws correlations between the time of day and the behavior (i.e., you want to know if there is a specific time during the day when the student screams more)
- Using a scatterplot
  - Segment the day into smaller time periods (i.e., 10 minute blocks using a scatterplot analysis form)
  - Mark a symbol (i.e., 'x') in each time period the behavior occurs

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**Scatterplot Data Collection**

Directions: Put a tally mark or X in the interval if a target and/or replacement behavior occurred during that time period.

Name: \_\_\_\_\_ Teacher: \_\_\_\_\_ Date: \_\_\_\_\_

Target Behavior: \_\_\_\_\_

Replacement Behavior: \_\_\_\_\_

TARGET BEHAVIORS					REPLACEMENT BEHAVIORS				
BEHAVIOR				OTHER	BEHAVIOR				OTHER
TIME					TIME				
8:00-8:15					8:00-8:15				
8:15-8:30					8:15-8:30				
8:30-8:45					8:30-8:45				
8:45-9:00					8:45-9:00				
9:00-9:15					9:00-9:15				
9:15-9:30					9:15-9:30				
9:30-9:45					9:30-9:45				
9:45-10:00					9:45-10:00				
10:00-10:15					10:00-10:15				
10:15-10:30					10:15-10:30				
10:30-10:45					10:30-10:45				
10:45-11:00					10:45-11:00				
11:00-11:15					11:00-11:15				
11:15-11:30					11:15-11:30				
11:30-11:45					11:30-11:45				
11:45-12:00					11:45-12:00				
12:00-12:15					12:00-12:15				
12:15-12:30					12:15-12:30				
12:30-12:45					12:30-12:45				
12:45-1:00					12:45-1:00				
1:00-1:15					1:00-1:15				
1:15-1:30					1:15-1:30				
1:30-1:45					1:30-1:45				
1:45-2:00					1:45-2:00				
2:00-2:15					2:00-2:15				
2:15-2:30					2:15-2:30				
2:30-2:45					2:30-2:45				
2:45-3:00					2:45-3:00				
TOTAL					TOTAL				
PERCENT					PERCENT				

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## Permanent Product

- Evaluate the occurrence of a behavior after it has happened
- May or may not observe the behavior as it is occurring
- Examples
  - Worksheets, videos, projects

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## Per Opportunity/Trial by Trial/Percentage

- Data is collected each time the student is instructed to perform a certain task
- Allows for teacher to focus on teaching methodology
- Allows teacher to deliver a probe to determine if student has skill
- Errorless teaching along with prompting and prompt fading techniques are used until mastery (usually defined as 80%) of skill occurs
- Recording the type of prompt is important, as the student makes progress prompts should be faded in order to systematically increase independence !!
- The student's level of performance is measured relative to 100%
- <https://youtu.be/EJHwuJhHZ3Y>

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## What type of data to use?

The behavior does not occur that often	Frequency, ABC
We need to know exactly how many times the behavior occurs that day	Frequency, ABC
The behavior is easy to count and the length of the observation time is consistent each day	Frequency, ABA
The behavior occurs for a long period of time and the beginning and ending is observable	Duration
The behavior does not occur often but when it does it occurs for a long period of time	Duration
Need to know the length of time the behavior occurs	Duration
Need to know how often or the specific times a behavior occurs	Interval, scatterplot
Behavior occurs at a high frequency	Interval, scatterplot, time sampling
Behavior occurs frequently and the duration is short	Interval, scatterplot, time sampling
Behavior occurs constantly	Interval, scatterplot, time sampling
Student is presented with opportunities to engage in appropriate behavior (correct)	Opportunities
Need to know how long it takes the student to start engaging in the appropriate behavior once cue is delivered	latency
Need to record multiple behaviors with multiple students	Time sampling
Need documentation of specific intervention/skill	Product

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## Data Collection Key for Opportunity/Percentage Data

- Data collection keys may vary with respect to the symbols used, but should include the following information about a student's response: Was the response .....
- Correct (+)
- Incorrect (-)
- Prompted (P)
  - Partial Physical (PP)
  - Full Physical (FP)
  - Modeled (MP)
  - Gestural prompt (GP)
  - Visual prompt (ViP)
  - Verbal prompt (VP)
- No response (O)

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Applied Behavior Analysis  
relies on data to make  
treatment decisions !!!

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