

Making Data-Driven Decisions for Challenging Behavior

University of Illinois Urbana-Champaign

Rebecca Folkerts Ed.M., BCBA

Stacy N. McGuire M.S., BCBA

Please take a packet for taking notes if you'd like!

Welcome!

- Housekeeping

- Feel free to grab a packet for taking notes
- In the Whova app, you will find these slides with clickable links

- Introductions

- Who is in the room?

Agenda

1. Defining target behaviors, importance of data collection
2. Choosing a data collection system: including frequency, duration, latency, partial, and whole interval with tips & tricks
3. Graphing data and interpreting graphs

Behavior & Operational Definitions

What is Behavior?

- Behaviors are *actions or events* that can be **observed**, **measured**, and are **repeated**
 - Observed: seen
 - Measured: counted
 - Repeated: done again



Describing & Defining Behavior

Non-examples (subjective, our interpretation)

- Disrespectful
- Defiant
- Rude
- Upset
- Frustrated
- Dysregulated
- Hurtful
- Unmotivated
- Tantrum

Examples (objective, what was seen & heard)

- Yells curse words
- Puts hands others' bodies without permission
- Drops body to floor
- Pushes over desk
- Rips paper
- Screams
- Puts head down
- Walks out of classroom without permission

Operational Definition Practice



Share out - would you change anything?

Operational Definition - Now, Data

Quantitative Data	Qualitative Data
Data collected on the behavior(s) resulting in a count or number .	Data that approximates, or tells a story that characterizes the behavior, but does not measure the behavior.
Frequency Duration Partial Interval	Antecedent, Behavior, Consequence (ABC), Anecdotal Notes/Reports
Does not provide context; Easy to measure changes over time	Good for understanding context; Difficult to measure changes over time

Now What?

- The word "data" in the education profession can be seen as a negative due its sometimes punitive usage.
- Data collection in regards to behavior comes from the science of Applied Behavior Analysis (ABA)
 - Used to measure a dimension of a behavior & **make decisions for interventions**
 - Data collection methods are the same in school, clinical, & residential settings.

What complaints or hesitations do you have or that you hear about collecting data?

Too time consuming

I don't know what to do with it afterwards

I can't get buy-in from others who need to help

It's hard to remember to collect it

I have too many other responsibilities already

But...

- Without frequent measurement and data collection of target behaviors, two mistakes can happen:
 - Ineffective interventions continue and the **challenging behavior continues**
 - And, **our** effort and time can be wasted!
 - Effective interventions that are slowly making change may be stopped too soon

Teaching & Training Data Collection

- Start with the **most important** (to the teacher) behavior
- Start with **one**
- Allow **choice-making**
- Don't expect 100% perfection
- Provide **reinforcement**

Data Collection: Frequency/Event Occurrence

Frequency/Event Occurrence

- Best for behaviors that occur with enough time to distinguish between the end of one response and the onset of another
(Cooper, Heron, & Heward 2007)
- Behavior must have a **clear beginning and end**
- Used if the goal is to increase or decrease **how often** the behavior(s) occur



Frequency Tips & Tricks



It might feel difficult or impossible to accurately count behaviors

- Transfer paper clips from one pocket to the other
- Clickers (can attach to lanyards)
- Tally marks on a data sheet or post-it note
- Designated binders or clipboards for each student or activity



Student: Joe Shmoe

Class/Teacher: Rebecca Folkerts

Observer: Stacy McGuire

Operational Definition of Behavior: swearing at peer

Instructions: Make a mark each time the behavior occurs. To calculate rate, divide the total number of occurrences by the length of the observation or class period.

Date	Tally	Total occurrences
11/4/21		7
11/7/21		23
11/15/21		19

Student: Sally Smith

Date: 3/1/2022

Behavior 1: Yelling or talking during group time without being called on by the teacher

Behavior 2: Getting out of seat without permission

Behavior 3: Tapping or nudging peers

Time Period	Behavior 1	Behavior 2	Behavior 3
8:00-9:00			
9:00-10:00			
10:00-11:00			
11:00-12:00			
12:00-1:00			
1:00-2:00			
Daily Total	78	44	66

Data Collection: Duration & Latency

Duration

- Used to determine **how long** a behavior occurs
- **Beginning and ending** must be clearly identified
- Total Duration Recording:
 - Total amount of time engaged in the behavior
- Duration per Occurrence:
 - Amount of time for each instance of the behavior occurs

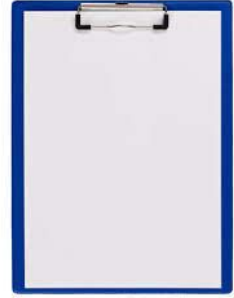
Latency

- Used to determine **how long until** an expected behavior occurs
- **Beginning and ending** must be clearly identified
- Total amount of **time lapsed** before expected behavior



Tips & Tricks

- Start your phone stopwatch
- Keep a clipboard nearby to write the start time
- Look at your classroom wall clock



ComputerHope.com

Duration Examples:

Eloping from classroom
Putting head down
Tantrums

Latency Examples:

Engaging in task
Following directions
Responding to a Question



Non-Compliance/Off-Task – When a directive is placed: Verbal refusals (“No” or “I’m not going to”), pushing materials off desk/table, leaving work area (remaining within classroom), engaging with objects/materials unrelated to current direction, and/or any other failure to comply with directive within 20 seconds of delivery. (*Duration: Begin time when an instruction or demand has been delivered and J has not complied within 20 seconds. Stop time when J begins to comply with the demand/engage in the task.*)

Physical Aggression– Using a hand, arm, foot, leg or any other part of his body OR using an object (in his hand or thrown) to make forceful physical contact with another person without their permission or when it is not part of an expected activity. NON-EXAMPLES: giving a high-five, playing tag, accidentally bumping into someone when transitioning or throwing materials that do NOT make physical contact with another person. Do NOT include threats or attempts that don’t result in physical contact. (*Frequency: 1 tally per instance of physical aggression as defined above.*)

Property Destruction – Ripping/pulling items off walls, throwing objects that are not meant for throwing, kicking, hitting or punching furniture, walls or other objects with force, pushing over furniture. NON-EXAMPLES: throwing a ball at recess.

Elopement – Walking or running out of a school setting (i.e., classroom, lunchroom, gym) without the permission of an adult or at a time that is not a transition. Walking or running away from an adult in the hallway without their permission. (*Duration: Start time when J leaves the room or building, stop time when he returns.*)

Climbing on Furniture – Stepping or standing on furniture such as chairs, tables, desks or windowsills. (*Frequency: 1 tally per instance of physical aggression as defined above.*)

Combination data sheet:

- Frequency
- Duration
- Multiple Behaviors

Credit: Amanda Austin

Time	Non-Compliance/Off-Task		Phys. Aggr.	Prop. Destr.	Elopement		Climbing on Furn.
	Start Time	End Time	(Frequency/Tallies)	(Frequency/Tallies)	Start Time	End Time	Frequency/Tallies
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							
1:30-2:00							
2:00-2:30							
2:30-3:00							
3:00-3:30							
3:30-4:00							
	Total (in minutes): Total (frequency):		Total:	Total:	Total (in minutes): Total (frequency):		Total:

Data Collection: Interval Recording

Partial Interval

It might be impossible to get an accurate frequency count while teaching

- **Divide data collection period** into short intervals
- Mark if the behavior occurred at **any point** during the interval
- Divide the number of intervals with behavior occurrence by total number of intervals
 - The shorter the interval, the more accurate the estimate

Partial Interval

Student Name: Johnny Test Behavior Definition: Grabbing peer's items without permission	
Interval	Did the behavior occur at all during the interval?
8:00 - 8:30	Yes No
8:30 - 9:00	Yes No
9:00 - 9:30	Yes No
9:30 - 10:00	Yes No
10:00 - 10:30	Yes No
10:30 - 11:00	Yes No
11:00 - 11:30	Yes No
11:30 - 12:00	Yes No

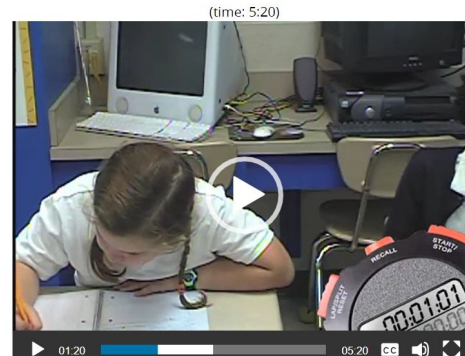
Practice Video!

<https://iris.peabody.vanderbilt.edu/mcontent/frequency-and-interval/>

Follow the instructions on the website - custom data sheets are provided to download.

View the video below. Download the [event recording form \(PDF\)](#) to record instances of the student's target behavior, determining the frequency and the rate. Then view the video again and download the [interval recording form \(PDF\)](#) to record this same behavior. Be sure to use the stopwatch when recording your data. Also, a beep at each twenty-second interval has been included to help with collecting the interval data.

Note: This video clip is quite short because it is for illustrative purposes only. To evaluate a student's behavior, an observer should gather more data.



Whole Interval

It might be impossible to get an accurate **duration** recording while teaching

- **Divide data collection period** into short intervals
- Mark if the behavior occurred during the **whole interval**
- Divide the number of intervals with behavior occurrence by total number of intervals
 - The shorter the interval, the more accurate the estimate



Whole Interval

Student Name: Johnny Test Behavior Definition: Putting head down after being given a directive	
Interval	Did the behavior occur during the entire interval?
8:00 - 8:30	Yes No
8:30 - 9:00	Yes No
9:00 - 9:30	Yes No
9:30 - 10:00	Yes No
10:00 - 10:30	Yes No
10:30 - 11:00	Yes No
11:00 - 11:30	Yes No
11:30 - 12:00	Yes No

Tips & Tricks

- Divide the intervals into **reasonable time frames**
- Make the interval transitions **match natural transitions** if possible
- **Partial interval** is best for high frequency, short duration behaviors
(e.g., getting out of seat multiple times)
- **Whole interval** is best for low frequency, long duration behaviors
(e.g., putting head down instead of working)
- The shorter the interval, the better the accuracy. *But*, it's better to have high accuracy and long intervals than no data at all

I will have a **super** day!



Date:	Was I <u>respectful</u>?	Was I <u>responsible</u>?	Was I <u>safe</u>?
	Did I use kind words? Did I keep a safe distance?	Did I follow directions? Did I do my work?	Did I get permission for my breaks? Did I keep my hands and feet to myself?
Breakfast	Yes! Try again	Yes! Try again	Yes! Try again
Morning Meeting	Yes! Try again	Yes! Try again	Yes! Try again
BREAK!			
Math	Yes! Try again	Yes! Try again	Yes! Try again
	Yes! Try again	Yes! Try again	Yes! Try again

Other ideas:

- You can fit target behaviors in with full classroom rules
- Can double as a self-monitoring system & schedule
- Intervals can be activities

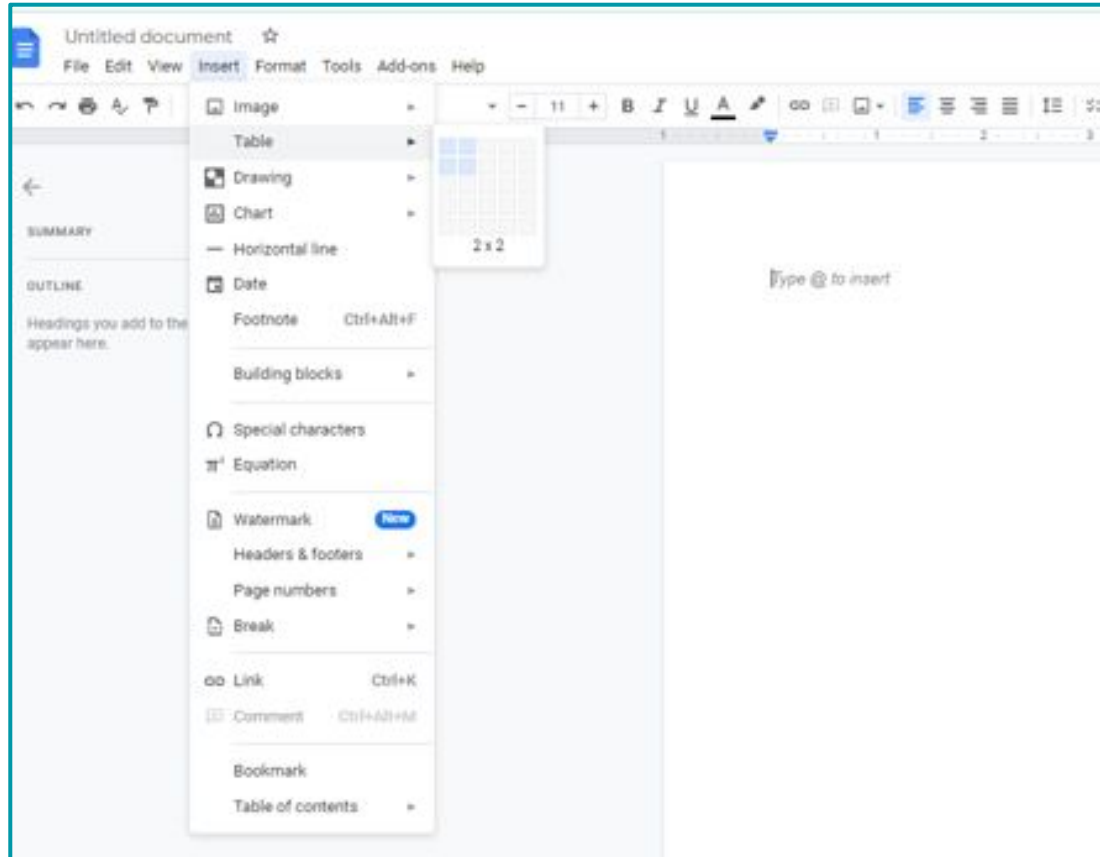
Activity - What is the best data collection method?

Getting out of seat during morning meeting	
Leaving the classroom without permission	
Screaming	
Hitting classmates	
Putting head down and not working	
Ripping up work	

What other questions would you be asking?

Data Sheets & Graphing

Make your own data sheets - printables



Make your own data sheets - multiple teachers

Behavior Data

For specials teachers

Did Sally leave your classroom without permission today?

Multiple choice

yes

no

Add option or add "Other"

Required

What time did Sally leave?

Short answer text

What time did Sally come back?

Short answer text

Comments

Long answer text

B	C	D	E	F
Did Sally leave your classroom without permission today?	What time did Sally leave?	What time did Sally come back?	Comments	Total Duration (in min)
yes	9:55	10:08	threw her book on the ground before she walked out	13
no				0
yes	9:50	10:02		12
yes	9:42	9:55		23



We have Data! Now, Graph!

DATA



DATA



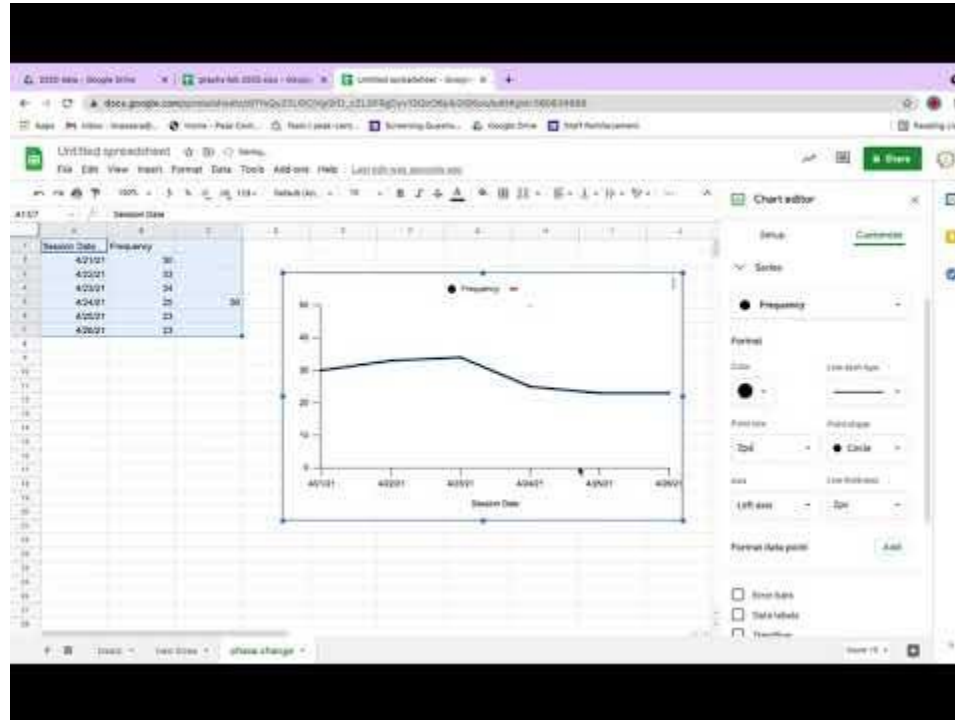
SORTED



ARRANGED



How to Graph - Google Sheets



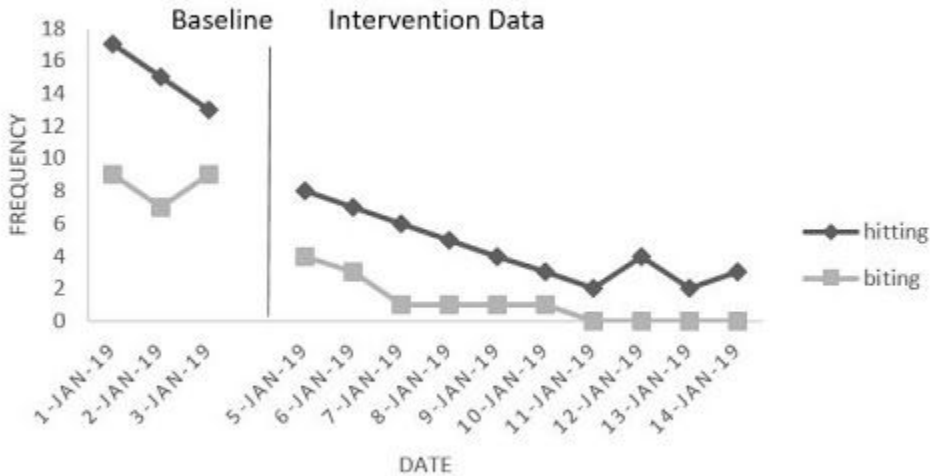
<https://www.youtube.com/watch?v=-SWzOoZVzhY>

Tips

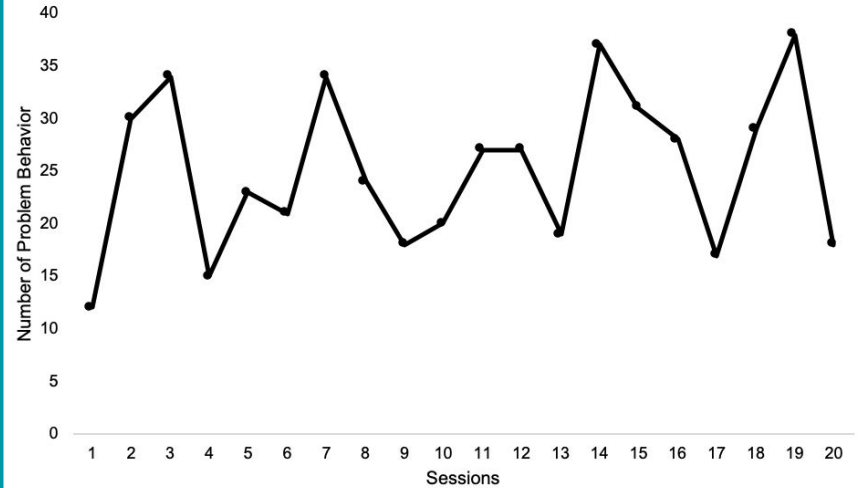
- Make sure all data is quantitative (e.g., number of intervals)
- Ensure it's all in the same unit (e.g., minutes)
- The far left column should be the date
- When creating the graph, click on the column header (rather than highlighting all data) for the graph to update as you enter data
- Title the graph

Interpreting Graphs

FREQUENCY OF HITTING

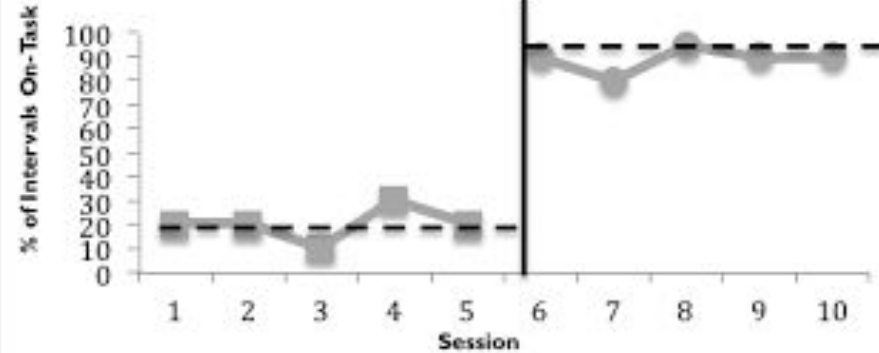


High Variability in Problem Behavior



Baseline

Intervention



Thank you!

Get these slides (and links!) on the Whova App

Rebecca Folkerts: rspring2@illinois.edu

Stacy McGuire: stacynm2@illinois.edu