

Teaching Tools

Data Book

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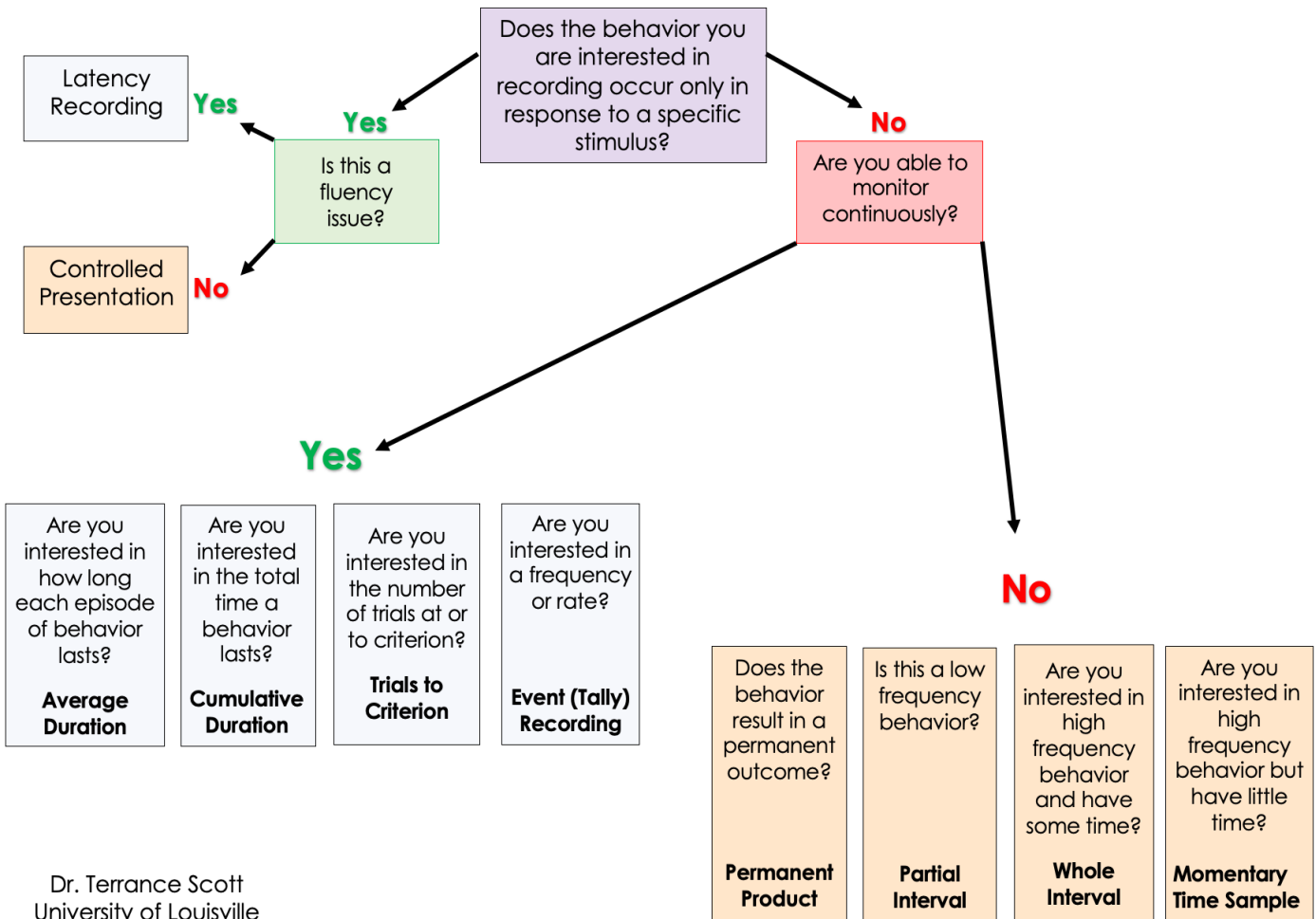
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Data Measurement Decision Model

WHAT IS IT?

This is a tool that can be used to help practitioners decide what type of data collection to take. There are multiple ways to collect data and this can help find the best way to get the measurement you want.

Measurement Decision Model



Dr. Terrance Scott
University of Louisville

REFERENCES

Scott, T., Anderson, C., & Alter, P. (2012). *Managing Classroom Behavior Using Positive Behavior Supports*. Upper Saddle River, NJ: Pearson.

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Operational Definition

WHAT IS IT? Behavior is anything a person does. A behavior identified as needing to be changed is called a target behavior. Before this target behavior is analyzed, it needs to be clearly defined. An operational definition clearly and concisely describes what the the occurrence and nonoccurrence of the behavior looks like in a way that is observable, measurable, and repeatable. There are four components of an operational definition which include: label, definition, examples, non-examples. Target behaviors can be defined two ways: functionally (it's effect on the environment and topographically. (the shape or form of the behavior).

WHY IS IT IMPORTANT?

Each person working with a student needs to have the same definition of a behavior. Having the same definition can increase the validity and accuracy of data between observers, environments, and occurrences (Cooper, et al, 2020).

WHEN CAN IT BE USED?

When writing IEP goals and objectives, defining behaviors assure everyone is working on the same behavior. When evaluating effectiveness of interventions, it is important that the same behavior is always being observed to measure changes in that behavior.

HOW TO IMPLEMENT

1. **Label the behavior**
2. **Define the target behavior in objective terms** Write a clear description of the behavior. An operational definition only includes behavior that is observable. Words such as aggressive, non-compliant, and refusal can be ambiguous, leaving interpretation to each individual. Objective terms would include descriptions that are clear to each observer such as leaving a red mark, tearing the paper, leaving the room without permission.
3. **Develop examples and non-examples of the behavior** Writing the examples and non-examples helps to clarify when the behavior is occurring or not occurring.
 - a. Examples should include the most typical instances of the behavior and less typical, but still included examples.
 - b. Non-examples include any behaviors that are similar, but not the same.
4. **Put the definition, examples, and non-examples together to write the operational definition.**

To view a short Video scan here:



REFERENCES

- Bailey, J. S., & Burch, M. R. (2002). *Research methods in applied behavior analysis*. Sage Publications, Inc.
- Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Hoboken, NJ: Pearson.
- Hawkins, R. P., & Dobes, R. W. (1977). Behavioral definitions in applied behavior analysis: Explicit or implicit? In B. C. Etzel, J. M. LeBlanc, & D. M. Baer (Eds.), *New directions in behavioral research: Theory, methods, and applications* (pp. 167-188). Hillsdale, NJ: Erlbaum.
- Umbreit, J., Ferro, J., Liaupsin, C. J., & Lane, K. L. (2007). *Functional behavior assessment and function-based intervention: An effective practical approach*. Prentice Hall: Upper Saddle River, NJ.

OPERATIONAL DEFINITION

STUDENT: Jim Halpert

DATE: 7/9/23

Target Behavior: Give it a **label**.
 Example: Off-task

Write the **definition** of a target behavior:
 Example definition of off-task behavior: Attending to activities other than direct instruction or instructor-led activities.

Examples:

- Laying head on desk
- Fidgeting with non-instructional materials
- Talking to peers

Non-Examples:

- Attending to work assigned
- Using materials for instructional activities
- Following classroom talking level expectation

Example of Complete **Operational Definition of Target Behavior:**

Off-task behavior refers to attending to activities other than direct instruction or instructor-led activities. This looks like lying head down on the desk, fidgeting with non-instructional materials and talking to peers. Non-examples include attending to work assigned, using materials for instructional activities and following the classroom talking level expectation.

OPERATIONAL DEFINITION

STUDENT:

DATE:

Operationally defining target behaviors contain 4 key components: Label, Definition, Examples and Non-Examples. The definition, should be:

1. **Objective:** This means they are measurable and have observable characteristics.
2. **Clear:** Should be distinct, explicit, obvious and clear so another person can read it and measure it.
3. **Complete:** It should include language that directs the observer in all situations, leaving little to judgment (i.e., examples and non-examples).

Target Behavior: Give it a **label**.

Write the **definition** of a target behavior:

Examples:

Non-Examples:

Example of Complete **Operational Definition of Target Behavior:**

Scatterplot Data

WHAT IS IT?

A scatterplot is usually a short-term data collection grid used to look for patterns of the presence and the absence of a frequent behavior across the day. A scatterplot grid is divided into time segments and the presence or absence of the behavior and general frequency of the behavior is recorded.

WHY IS IT IMPORTANT?

It is often used to look for optimal times of day to take data on a particular behavior, and is followed by ABC data collection. It can include variables such as setting, time of day, activity, physical structures, people, and other variables. The visual display of the grid is quick and easy to interpret.

WHEN CAN IT BE USED?

It is used to look for patterns of high and low rates of a behavior. Frequency recording shows the average responding, but when wanting to identify relationships between stimuli that occur and changes in the behavior, a scatterplot is needed.

HOW TO IMPLEMENT

1. Create a grid that has activities/class subjects and intervals of time on the left vertical axis (See example 1)
2. On the horizontal axis of the grid, enter dates of observation (See example 2).
3. Create symbol key to identify what will represent no behavior, low rate of behavior, and high rate of behavior. This is usually represented by a slash for low rate, X for high rate, and blank or 0 for absence of behavior (See example 3).
4. Directly observe the student and mark the time/day when each level of behavior occurs.
5. After a week of data is collected, look for patterns in times/activities and days of the week to find when behavior is most and least likely to occur. Use those segments of time to collect ABC data.

EX-1	TIMES:	
breakfast	7:30-7:45	
Clean up	7:45-8:00	
calendar	8:00-8:15	
Morning grooming	8:15-8:30	
reading	8:30-8:45	
writing	8:45-9:00	

EX-2

To view a short video, scan here:

EX-3				
No behavior		1-2 behaviors	/	3+ behaviors

REFERENCES

Touchette PE, MacDonald RF, Langer SN. A scatter plot for identifying stimulus control of problem behavior. *Journal of Applied Behavior Analysis*. 1985 Winter;18(4):343-51.

Unwin, A. (2020). Why is data visualization important? what is important in data visualization?. *Harvard Data Science Review*, 2(1), 1.

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SCATTERPLOT DATA

STUDENT: Creed Bratton **DATES:** 7/9/23-7/13/23

TARGET BEHAVIOR: screaming at staff

ACTIVITY:	TIMES:	M 7/9	T 7/10	W 7/11	TH 7/12	F 7/13
breakfast	7:30-7:45					
Clean up	7:45-8:00	\	\			
calendar	8:00-8:15				\	
Morning grooming	8:15-8:30			\		
reading	8:30-8:45		\	\	\	\
writing	8:45-9:00	\	X	X	X	\
Leisure reading	9:00-9:15					
Snacks/games	9:15-9:30					
Money skills	9:30-9:45		\		\	
math	9:45-10:00	X	X	\	\	
math	10:00-10:15	X	\	X		
Gross motor games	10:15-10:30			\		
Social skills	10:30-10:45		\			
Social skills	10:45-11:00				\	
Work skills	11:00-11:15	\				
lunch	11:15-11:30					
lunch	11:30-11:45					
science	11:45-12:00	\	\	\		
science	12:00-12:15	\			\	
PM grooming	12:15-12:30					
Dance break	12:30-12:45					
IEP goals	12:45-1:00	\	\			
IEP goals	1:00-1:15					
Home living	1:15-1:30			\		
Class jobs	1:30-1:45		\			
Class jobs	1:45-2:00	\				
Pack up	2:00-2:15					
dismissal	2:15-2:30					

No behavior		1-2 behaviors	\	3+ behaviors	X
-------------	--	---------------	---	--------------	---

SCATTERPLOT DATA						
STUDENT:				DATES:		
TARGET BEHAVIOR:						
ACTIVITY:	TIMES:	MON	TUE	WED	THUR	FRI

No behavior		1-2 behaviors	/	3+ behaviors	X
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A-B-C Data



WHAT IS IT?

ABC (3-term contingency) recording is a way to record observations on the events preceding and following a behavior, (for example, Zaira crawled under her desk during Math. Before this behavior, her teacher said, "get out your math book," (antecedent). After this behavior, the teacher showed her what she was working for and asked her to sit in her chair (consequence).

WHY IS IT IMPORTANT?

It is important to identify what might be motivating or preventing a behavior from occurring. What happens after a behavior will either reinforce it (cause it to happen more in the future) or will punish it (cause it to happen less in the future). What happens before the behavior will either prevent it or cause it.

WHEN CAN IT BE USED?

ABC data is used to plan effective interventions and plans that lead to better behavior and better learning. In order to provide effective interventions, it is important to identify why a person is behaving in a particular way (function of behavior). This can also be used to plan effective academic interventions as well.

HOW TO IMPLEMENT

To view a short video scan here:



After determining when the most and least likely times to see behavior with a scatterplot assessment, take ABC data by directly observing a student. ABC data forms have a three-column chart with Antecedent, Behavior, and Consequence labels for each column. While directly observing a student, record a behavior when it occurs. Record what happens after the behavior in the "consequence" column, then complete the "antecedent" column with what happened right before the behavior occurred. Other parts of the form may include labeling the date and time, who the observer is, and what the setting was. After gathering this information, more specific data can be taken on behaviors identified through the ABC form.

A-B-C RECORDING SHEET				
STUDENT <i>Jackson Davis</i>			SETTING <i>Classroom</i>	
DATE/TIME:	ANTECEDENT What happened before the behavior?	BEHAVIOR What did the student do?	CONSEQUENCE What happened next?	STAFF INITIAL
9/12/22 9:13	Para said, "it's time for science" and showed him a picture of science room	Threw his iPad and screamed "NBC.com" 5 times.	Para-pick up your ipad and pointed to it Sat in his chair so he could not throw it	SK
9/12/22 9:41	Teacher "clean up your crayons and glue please"	Squeezed glue on table and broke crayons	Teacher gave him paper towel to clean glue. "Let's clean up together" he shook his head no	SK
9/12/22 9:45	Teacher-when you are done cleaning you can go outside	Wiped up the glue	"let's get your jacket!" helped him put his jacket on and walked him to the door.	SK

REFERENCES

Hanley, G. P., Jin, C. S., Vanselow, N. R., & Hanratty, L. A. (2014). Producing meaningful improvements in problem behavior of children with autism via synthesized analyses and treatments. *Journal of Applied Behavior Analysis*, 47(1), 16-36..

Cooper J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed). Upper Saddle River, NJ: Pearson Education, Inc.

A-B-C RECORDING SHEET

STUDENT	SETTING			STAFF INITIALS
Andy Barnard	homeroom			
DATE/TIME:	ANTECEDENT What happened before the behavior?	BEHAVIOR What did the student do?	CONSEQUENCE What happened next?	
7/9/23 10:17	Teacher asked him to put his phone away	Walked to teacher's desk and leaned toward her yelling "no"	Teacher pointed to the bin for student phones	sk
7/9/23 11:22	Para corrected student's spelling	Stood behind para and yelled "fat dummy" in para's left ear	Para said, "keep going, you only missed 2"	sk
7/9/23 11:29	Teacher refused to give him his phone when he tried to grab it	Stood up and yelled "you are all getting fired!" while pointing to the paras and teacher	Teacher said, "now you can wait another 10 minutes."	sk
			EXAMPLE	

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A-B-C RECORDING SHEET

STUDENT		SETTING		STAFF INITIALS
DATE/TIME:	ANTECEDENT What happened before the behavior?	BEHAVIOR What did the student do?	CONSEQUENCE What happened next?	

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Frequency and Rate Data

WHAT IS IT?

Frequency (count) recording is a way to measure the number of times a behavior occurs (for example, Zane got out of his seat 7 times). **Rate** recording is the frequency over a period of time (for example, Zane got out of his seat 7 times in 21 minutes, or once every 3 minutes).

WHY IS IT IMPORTANT?

Frequency recording is the easiest form of data collection to do. It is a good tool to use when asking caregivers to keep track of a behavior.

If the behavior is tracked during sessions of differing lengths, the rate provides a more accurate picture of the behavior because it shows the frequency in even segments of time.

WHEN CAN IT BE USED?

Frequency and rate can be used when trying to increase or decrease a behavior with a clear beginning and end. It is best for behavior that happens for equal durations. It does not work for behaviors that occur for different durations, long periods of time, or at a rate too fast to count. It requires the student to be observed continuously.

HOW TO IMPLEMENT

To view a short video, scan here:



Frequency:

1. Clearly define the behavior so everyone is measuring the same thing and observe.
2. When the target behavior occurs, make a tally mark.
3. Add all the tally marks at the end of the observation. This is your frequency count.

Rate:

1. Clearly define the behavior so everyone is measuring the same thing and observe.
2. When the target behavior occurs, make a tally mark and write down the time.
3. Add all the tally marks at the end of the observation.
4. Divide the number of tallies by the total observation time to get rate.

BEHAVIOR TO OBSERVE: Correct responses per minute						RATE= TOTAL TALLY/TIME	
DATE:	STAFF INITIALS	START TIME:	END TIME:	TALLY MARKS:	TOTAL TALLY:	TOTAL TIME:	RATE:
7/5/23	SLK	8:15	8:25		14	10	1.4 per minute
7/6/23	SLK	9:15	9:30		18	15	1.2 per minute
7/7/23	SLK	11:10	11:12		4	2	2 per minute

REFERENCES

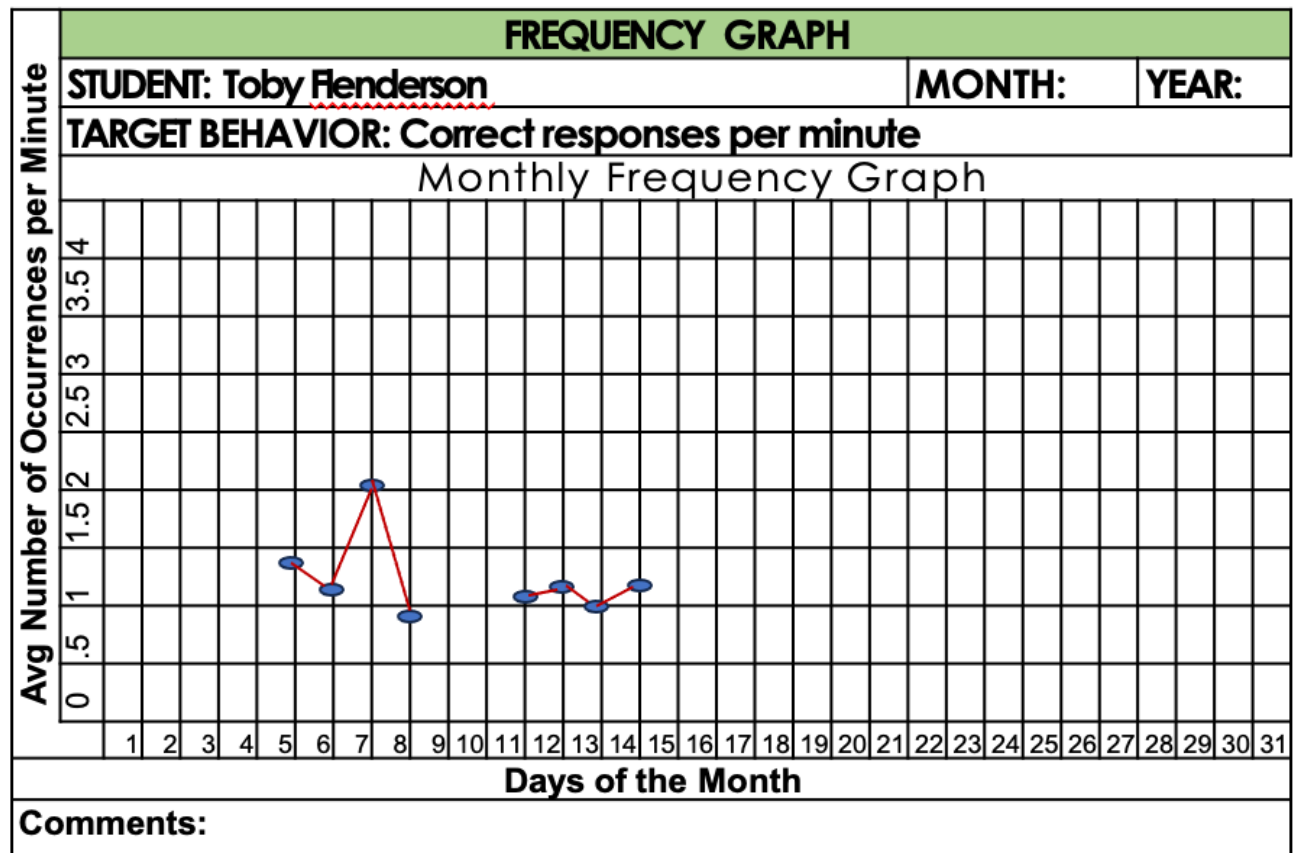
- Alberto, P. A., Troutman, A. C., & Axe, J. (2022). *Applied behavior analysis for teachers* (10th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Cooper J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed). Upper Saddle River, NJ: Pearson Education, Inc.

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RECORDING SHEET AND GRAPH EXAMPLES



FREQUENCY AND RATE RECORDING SHEET							
STUDENT: Toby <u>Flenderson</u>							
BEHAVIOR TO OBSERVE: Correct responses per minute							RATE= TOTAL TALLY TIME
DATE:	STAFF INITIALS	START TIME:	END TIME:	TALLY MARKS:	TOTAL TALLY:	TOTAL TIME:	RATE:
7/5/23	SLK	8:15	8:25		14	10	1.4 per minute
7/6/23	SLK	9:15	9:30		18	15	1.2 per minute
7/7/23	SLK	11:10	11:12		4	2	2 per minute
7/8/23	SLK	8:12	8:22		9	10	.9 per minute
7/11/23	MDS	9:15	9:28		14	13	1.1 per minute
7/12/23	MDS	10:15	10:25		12	10	1.2 per minute
7/13/23	MDS	2:12	2:27		15	15	1 per minute
7/14/23	SLK	8:20	8:30		12	10	1.2 per minute
AVERAGE RATE: $98/85=1.2$ per min							



FREQUENCY AND RATE RECORDING SHEET

STUDENT:

BEHAVIOR TO OBSERVE:

$$\text{RATE} = \frac{\text{TOTAL TALLY}}{\text{TIME}}$$

DATE:	STAFF INITIALS	START TIME:	END TIME:	TALLY MARKS:	TOTAL TALLY:	TOTAL TIME:	RATE:

NOTES:

Cumulative Duration

WHAT IS IT?

This type of data collection measures the cumulative (total) amount of time a behavior occurs within a specified observation period, time a student is engaged or needs to engage in a task. It can be reported as total time or percentage of time.

WHY IS IT IMPORTANT?

Collecting duration data is important for measuring if a target is happening for more or less time. It is used for behaviors that have a clear beginning and end or those that happen at such a high rate that it is not possible to get an accurate count.

WHEN CAN IT BE USED?

Cumulative duration is used when the teacher wants to assess the total amount of time the student spends engaged in a behavior, how long it takes to complete a task, or how long a student is on/off task. It requires continuous observation.

HOW TO IMPLEMENT

When collecting this type of data, make sure the behavior definition specifies the length of time that the behavior must occur in order to "count."

1. Clearly define the behavior and include how long the behavior needs to occur in order to count if needed and what the onset looks like if it a behavior that grows over time.
2. Start observing the student and start the timer when the behavior starts.
3. When the behavior ends, stop the timer.
4. Quickly record the duration of the behavior.
5. Repeat the process until the observation period is over.
6. Add up all the recorded times to get the cumulative (total) duration.
7. To get the percent of time, divide the total duration by the total time observed.

REFERENCES

- Alberto, P. A., Troutman, A. C., & Axe, J. (2022). *Applied behavior analysis for teachers* (10th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Cooper J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed). Upper Saddle River, NJ: Pearson Education, Inc.

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RECORDING SHEET AND GRAPH EXAMPLES



TOTAL DURATION RECORDING SHEET

STUDENT: Kelly Kapoor

BEHAVIOR TO OBSERVE: Time on task

DATE:	STAFF INITIAL	START TIME:	END TIME:	DURATION:	COMMENTS:
7/5/23	SLK	8:48	8:57	9 min	
7/5/23	SLK	11:10	11:16	6 min	
7/6/23	SLK	11:23	11:34	11 min	preferred activity
7/6/23	SLK	8:32	8:39	7 min	
7/7/23	MDS	11:17	11:25	8 min	
7/7/23	MDS	12:15	12:21	6 min	difficult task
7/8/23	MDS	8:39	8:51	12 min	

NOTES:

TOTAL DURATION GRAPH

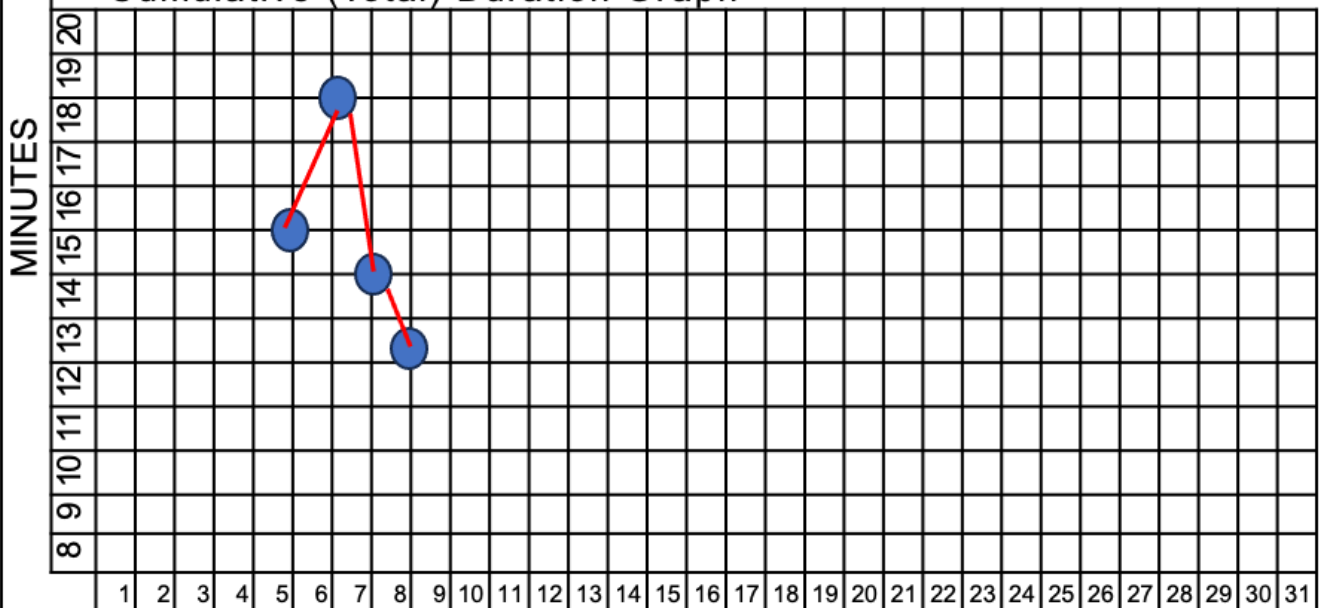
STUDENT: Kelly Kapoor

MONTH:

YEAR:

TARGET BEHAVIOR: Time on task

Cumulative (Total) Duration Graph



Days of the Month

Comments:

TOTAL DURATION RECORDING SHEET

STUDENT:

BEHAVIOR TO OBSERVE:

DATE:	STAFF INITIAL	START TIME:	END TIME:	DURATION:	COMMENTS:

NOTES:

TOTAL DURATION GRAPH																																							
STUDENT:																MONTH:								YEAR:															
TARGET BEHAVIOR:																																							
Cumulative (Total) Duration Graph																																							
Minutes	28																																						
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			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
	Days of the Month																																						
	Comments:																																						

Latency Recording

WHAT IS IT?

This type of data collection measures the amount of time that lapses between an antecedent (e.g., teacher's directive) and when the student begins to perform a specified behavior.

WHY IS IT IMPORTANT?

Collecting latency data is important because it provides a measure of the student's delay in engaging in behavior. It can be used to track response efficiency.

WHEN CAN IT BE USED?

Latency Recording is used when the teacher wants to know the average amount of time it takes a student to respond in a specified manner, after a signal or prompt.

HOW TO IMPLEMENT

To view a short video, scan here:



1. Clearly define the behavior
2. Start observing the student and start the timer when the antecedent is given.
3. When the behavior starts, stop the timer.
4. Quickly record the time in seconds or minutes.
5. Repeat the process until the observation period is over.

Examples:

- Average time it takes student to be seated after a teacher request.
- Average time that it takes student to begin cleanup after request.
- Average time it takes student to disengage from other students once requested to move.
- Average time it takes for a student to begin eating once food is in front of him.

REFERENCES

- Alberto, P. A., Troutman, A. C., & Axe, J. (2022). *Applied behavior analysis for teachers* (10th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Cooper J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Upper Saddle River, NJ: Pearson Education, Inc.

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LATENCY RECORDING SHEET

STUDENT: Stanley Hudson

BEHAVIOR TO OBSERVE:
Starting work when asked

DATE:	STAFF INITIALS	(Instruction) START TIME:	(student responds) END TIME:	LATENCY:	COMMENTS:
7/5/23	SLK	8:18	8:23	5 minutes	
7/5/23	SLK	8:51	8:55	4 minutes	
7/5/23	SLK	9:02	9:08	6 minutes	
7/6/23	SLK	8:22	8:26	4 minutes	
7/6/23	MDS	8:39	8:45	6 minutes	
7/6/23	MDS	9:01	9:04	3 minutes	
7/7/23	MDS	8:11	8:15	4 minutes	

NOTES:

LATENCY GRAPH																																				
STUDENT:																		MONTH:						YEAR:												
TARGET BEHAVIOR:																																				
Latency Graph																																				
Minutes	28																																			
	27																																			
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
	Days of the Month																																			
Comments:																																				

LATENCY RECORDING SHEET

STUDENT:

BEHAVIOR TO OBSERVE:

DATE:	STAFF INITIALS	(Instruction) START TIME:	(student responds) END TIME:	LATENCY:	COMMENTS:

NOTES:

Partial Interval Recording

WHAT IS IT?

Partial interval recording is an interval recording method. Observation times are broken into smaller intervals of time and marked with one symbol if the behavior is not observed and another symbol if it is observed.

WHY IS IT IMPORTANT?

Collecting partial interval data is important because it can measure low rate behaviors (those that occur infrequently). It also minimizes the observation of a student since it does not require continuous observation. It may overestimate the behavior. The shorter the interval, the more accurate the data will be, but more observation will be required by the observer.

WHEN CAN IT BE USED?

Partial Interval Recording is used when the teacher does not have time to observe continuously but wishes to get an approximation of the degree to which a student engages in a low frequency behavior. It is best for measuring a behavior you want to DECREASE.

To view a short video, scan here:



HOW TO IMPLEMENT

1. Clearly define the behavior
2. Clearly define observation time and length of intervals.
*Interval length should be set to approximate baseline rates of behavior (if behavior tends to occur every 10 minutes then 5-10 minute intervals makes sense).
3. Start observing the student and record whether the behavior was observed AT ANY TIME during the interval (+ or -).
4. Repeat the process until the observation period is over.
5. When the observation period ends, add up all the + marks (observed) divide that number by the total number of intervals. This is recorded as percentage of occurrences.

Examples:

- Percent of intervals in which student was in seat during reading.
- Percent of intervals in which student was writing in journal.
- Percent of intervals in which student was engaged in conflict with others at recess.
- Percent of intervals student engaged in rocking back and forth.

REFERENCES

Alberto, P. A., Troutman, A. C., & Axe, J. (2022). *Applied behavior analysis for teachers* (10th ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Cooper J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Tieghe-Benet, M. C., Miller, K., Reiners, J., Robinett, B. E. Freeman, R. L., Smith, C. L., Baer, D., Palmer, A. (2003). *Encouraging Student Progress (ESP), Student/ team book*. Lawrence, KS: University of Kansas.

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PARTIAL INTERVAL RECORDING SHEET

STUDENT: Dwight Schrute

DATE: 7/9/23 **OBSERVER:** Pam Beesley **SETTING:** PE class

BEHAVIOR TO OBSERVE: Participating in PE activities

INTERVAL LENGTH: 15 seconds **TOTAL OBSERVATION TIME:** 43 minutes **TOTAL PERCENTAGE:** 190/5= 38%

START TIME: 9:42

INTERVAL 1

	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS = 50%
(+ or -)	+	+	-	-	-	+	-	+	+	-	

START TIME: 9:52

INTERVAL 2

	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS = 60%
(+ or -)	-	-	-	+	+	-	+	+	+	+	

START TIME: 10:05

INTERVAL 3

	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS = 20%
(+ or -)	-	-	-	-	-	-	+	+	-	-	

START TIME: 10:15

INTERVAL 4

	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS = 40%
(+ or -)	-	-	-	+	+	+	-	-	-	+	

START TIME: 10:30

INTERVAL 5

	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS = 20%
(+ or -)	-	-	-	+	-	-	-	+	-	-	

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INTERVAL GRAPH

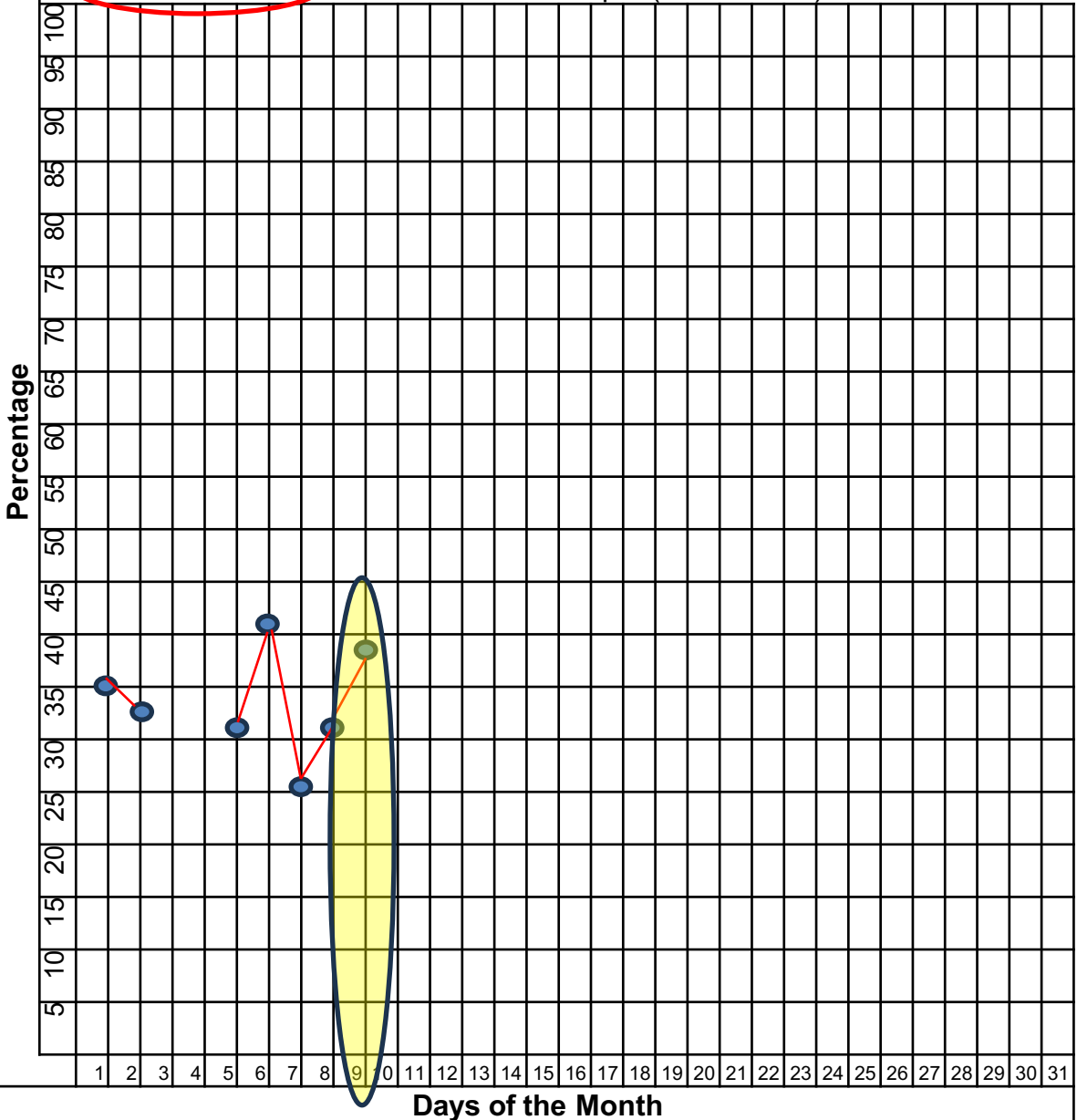
STUDENT: Dwight Schrote

MONTH:

YEAR:

TARGET BEHAVIOR: Participating in PE activities

Partial Interval / Whole Interval Graph (circle one)



Comments:

PARTIAL INTERVAL RECORDING SHEET

STUDENT:

DATE:	OBSERVER:	SETTING:
--------------	------------------	-----------------

BEHAVIOR TO OBSERVE:

INTERVAL LENGTH:	TOTAL OBSERVATION TIME:	TOTAL PERCENTAGE:
-------------------------	--------------------------------	--------------------------

START TIME:											
INTERVAL 1											
	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS =
(+ or -)											

START TIME:											
INTERVAL 2											
	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS =
(+ or -)											

START TIME:											
INTERVAL 3											
	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS =
(+ or -)											

START TIME:											
INTERVAL 4											
	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS =
(+ or -)											

START TIME:											
INTERVAL 5											
	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS =
(+ or -)											

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INTERVAL GRAPH																																											
STUDENT:																MONTH:					YEAR:																						
TARGET BEHAVIOR:																																											
Partial Interval/Whole Interval Graph (circle one)																																											
Percentage	100																																										
	95																																										
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	Days of the Month																																										
	Comments:																																										

Whole Interval Recording

WHAT IS IT?

Whole interval recording is a type of data collection that involves observing whether a behavior occurs or does not occur during the whole specified interval of time.

WHY IS IT IMPORTANT?

Collecting whole interval data is important because it can measure behavior that is not easily counted. It is used for behavior that does not have a clear beginning and/or end, or behavior that occurs at such a high rate that it is difficult to keep count on it. Measuring ongoing behaviors that continue across intervals with this method can provide a summary of the duration.

WHEN CAN IT BE USED?

Whole Interval Recording is best used for measuring behavior that you want to INCREASE. It provides an estimate of a behavior's duration as well as a snapshot of what context in which the behavior is most likely to occur. This method is only used if intervals are able to be observed from start to finish.

HOW TO IMPLEMENT

1. Clearly define the behavior
2. Clearly define observation time and length of intervals. Interval length needs to be the same each time observations take place.
*Interval length should be set to approximate baseline rates of behavior (if behavior tends to occur every 10 minutes then 5-10 minute intervals makes sense).
3. Start observing the student and record whether the behavior was observed during the ENTIRE interval (+ or -).
4. Repeat the process until the observation period is over.
5. When the observation period ends, add up all the + marks (observed) divide that number by the total number of intervals. This is recorded as percentage of intervals.

Examples:

Attending to instruction
Writing
Working on a given assignment
Cooperative Play

For Whole Interval graph
example, see Partial
Interval graph example

REFERENCES

- Alberto, P. A., Troutman, A. C., & Axe, J. (2022). *Applied behavior analysis for teachers* (10th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Cooper J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed). Upper Saddle River, NJ: Pearson Education, Inc.
- Zangrillo, A.N., Walker, S.G., Roane, H.S., Sullivan, W.E., Keller, D.L., DeRosa, N.M. (2021). Measurement and Data Recording of Aggression. In: Luiselli, J.K. (eds) *Applied Behavior Analysis Treatment of Violence and Aggression in Persons with Neurodevelopmental Disabilities*. *Advances in Preventing and Treating Violence and Aggression*. Springer, Cham. https://doi.org/10.1007/978-3-030-68549-2_1

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(mark if the behavior is observed throughout the whole interval)

WHOLE INTERVAL RECORDING SHEET

STUDENT: Meredith Palmer

DATE: 7/6/23 **OBSERVER:** Stanley Hudson **SETTING:** math class

BEHAVIOR TO OBSERVE: Asking for a break when having difficulty solving a problem

INTERVAL LENGTH: 15 seconds **TOTAL OBSERVATION TIME:** 43 minutes **TOTAL PERCENTAGE:** 190/5= 38%

START TIME: 9:42

INTERVAL 1

	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS = 50%
(+ or -)	+	+	-	-	-	+	-	+	+	-	

START TIME: 9:52

INTERVAL 2

	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS = 60%
(+ or -)	-	-	-	+	+	-	+	+	+	+	

START TIME: 10:05

INTERVAL 3

	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS = 20%
(+ or -)	-	-	-	-	-	-	+	+	-	-	

START TIME: 10:15

INTERVAL 4

	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS = 40%
(+ or -)	-	-	-	+	+	+	-	-	-	+	

START TIME: 10:30

INTERVAL 5

	1	2	3	4	5	6	7	8	9	10	TOTAL + / TOTAL INTERVALS = 20%
(+ or -)	-	-	-	+	-	-	-	+	-	-	

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(mark if the behavior is observed throughout the whole interval)

WHOLE INTERVAL RECORDING SHEET

STUDENT:

DATE:	OBSERVER:	SETTING:
--------------	------------------	-----------------

BEHAVIOR TO OBSERVE:

INTERVAL LENGTH:	TOTAL OBSERVATION TIME:	TOTAL PERCENTAGE:
-------------------------	--------------------------------	--------------------------

START TIME:	INTERVAL 1										TOTAL + / TOTAL INTERVALS =
	1	2	3	4	5	6	7	8	9	10	
(+ or -)											

START TIME:	INTERVAL 2										TOTAL + / TOTAL INTERVALS =
	1	2	3	4	5	6	7	8	9	10	
(+ or -)											

START TIME:	INTERVAL 3										TOTAL + / TOTAL INTERVALS =
	1	2	3	4	5	6	7	8	9	10	
(+ or -)											

START TIME:	INTERVAL 4										TOTAL + / TOTAL INTERVALS =
	1	2	3	4	5	6	7	8	9	10	
(+ or -)											

START TIME:	INTERVAL 5										TOTAL + / TOTAL INTERVALS =
	1	2	3	4	5	6	7	8	9	10	
(+ or -)											

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INTERVAL GRAPH																																									
STUDENT:																MONTH:								YEAR:																	
TARGET BEHAVIOR:																																									
Partial Interval/ <u>Whole Interval Graph</u> (circle one)																																									
Percentage	100																																								
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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31									
	Days of the Month																																								
	Comments:																																								

Momentary Time Sampling

WHAT IS IT?

Momentary Time Sampling is an interval recording strategy which involves observing a behavior and recording whether it occurs or does not occur at the very end of a specified interval.

WHY IS IT IMPORTANT?

It is helpful when the teacher has little time to observe continuously but wishes to get an approximation of the degree to which a student engages in a high frequency behavior. Momentary Time Sampling minimizes the observation of the student (more than other interval recording techniques).

WHEN CAN IT BE USED?

Momentary Time Sampling is used when the behavior you are looking at is not easily counted or it is difficult to tell exactly when the behavior begins or when it ends. This data is good for high rate behaviors (those that occur frequently). Keep in mind that this approximation of behavior tends to **underestimate** frequency of the behavior and **overestimate** the duration.

HOW TO IMPLEMENT

To view a short video, scan here:



1. Clearly define the behavior
2. Clearly define observation time and length of intervals. Interval length needs to be the same each time observations take place.
3. Start observing the student and record whether the behavior was observed AT THE END of the interval (YES or NO).
4. Repeat the process until the observation period is over.
5. When the observation period ends, add up all the YES intervals divide that number by the total number of intervals. This is recorded as percent of intervals.

Examples:

- Percent of intervals in which student was playing with others at recess.
- Percent of intervals in which student is cursing.
- Percent of intervals in which student was writing in journal.

For Time Sampling graph example, see Partial Interval graph example

REFERENCES

- Alberto, P. A., Troutman, A. C., & Axe, J. (2022). *Applied behavior analysis for teachers* (10th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Cooper J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis* (3rd ed). Upper Saddle River, NJ: Pearson Education, Inc.
- LeBlanc, L. A., Lund, C., Kooken, C., Lund, J. B., & Fisher, W. W. (2020). Procedures and accuracy of discontinuous measurement of problem behavior in common practice of applied behavior analysis. *Behavior Analysis in Practice*, 13(2), 411-420.

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MOMENTARY TIME SAMPLING RECORDING SHEET		
STUDENT: Phyllis Vance		
DATE:	OBSERVER: David Wallace	SETTING: school building
BEHAVIOR TO OBSERVE: Walking beside adult in the hallway		
INTERVAL LENGTH: 5 sec.	TOTAL OBSERVATION TIME:	TOTAL PERCENTAGE: 50+40+60+50+70=270/5=54

(mark if the behavior is observed AT THE END of the interval)

START TIME: 8:20											
INTERVAL 1											
	1	2	3	4	5	6	7	8	9	10	
Yes/No	Y	N	Y	Y	N	N	N	Y	Y	N	TOTAL YES / # of INTERVALS = 5/10=50%

START TIME: 9:17											
INTERVAL 2											
	1	2	3	4	5	6	7	8	9	10	
Yes/No	N	N	N	Y	Y	N	N	Y	Y	N	TOTAL YES / # of INTERVALS = 4/10=40%

START TIME: 10:06											
INTERVAL 3											
	1	2	3	4	5	6	7	8	9	10	
Yes/No	Y	N	N	Y	Y	Y	N	Y	Y	N	TOTAL YES / # of INTERVALS = 6/10=60%

START TIME: 11:35											
INTERVAL 4											
	1	2	3	4	5	6	7	8	9	10	
Yes/No	Y	N	Y	N	N	N	Y	Y	Y	N	TOTAL YES / # of INTERVALS = 5/10=50%

START TIME: 12:42											
INTERVAL 5											
	1	2	3	4	5	6	7	8	9	10	
Yes/No	Y	Y	Y	N	Y	N	Y	N	Y	Y	TOTAL YES / # of INTERVALS = 7/10=70%

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MOMENTARY TIME SAMPLING RECORDING SHEET

STUDENT:

DATE:	OBSERVER:	SETTING:
--------------	------------------	-----------------

BEHAVIOR TO OBSERVE:

INTERVAL LENGTH:	TOTAL OBSERVATION TIME:	TOTAL PERCENTAGE:
-------------------------	--------------------------------	--------------------------

(mark if the behavior is observed AT THE END of the interval)

START TIME:											
INTERVAL 1											
	1	2	3	4	5	6	7	8	9	10	TOTAL YES / # of INTERVALS =
Yes/No											

START TIME:											
INTERVAL 2											
	1	2	3	4	5	6	7	8	9	10	TOTAL YES / # of INTERVALS =
Yes/No											

START TIME:											
INTERVAL 3											
	1	2	3	4	5	6	7	8	9	10	TOTAL YES / # of INTERVALS =
Yes/No											

START TIME:											
INTERVAL 4											
	1	2	3	4	5	6	7	8	9	10	TOTAL YES / # of INTERVALS =
Yes/No											

START TIME:											
INTERVAL 5											
	1	2	3	4	5	6	7	8	9	10	TOTAL YES / # of INTERVALS =
Yes/No											