How to Use Data to Monitor Student Progress

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Response to Intervention

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RTI Toolkit: A Practical Guide for Schools

Removing the Blindfold: How to Use Classroom Data to Set Goals and Monitor Student Progress

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ACADEMIC RTI

Tier 3: High-Risk Students: 5%

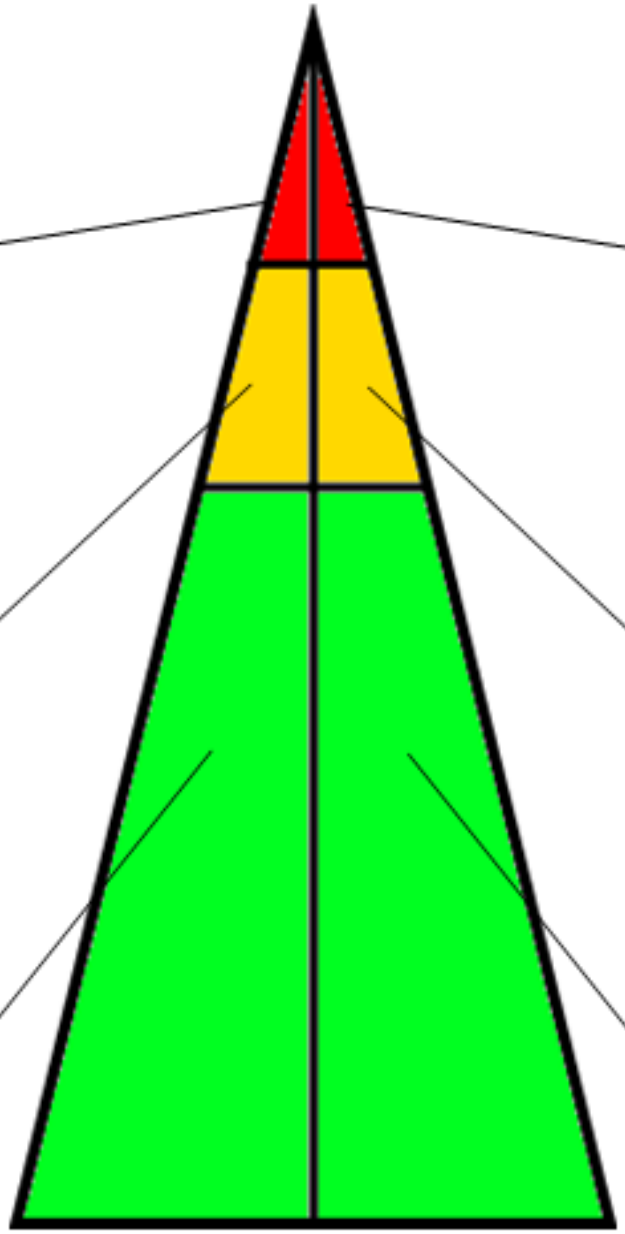
- Diagnostic assessment of academic problems
- RTI Team Meetings
- Customized/intensive academic intervention plan
- Daily progress-monitoring

Tier 2: At-Risk Students: 15%

- Small-group interventions to address off-grade-level academic deficits
- Regular progress-monitoring

Tier 1: Universal: Core Instruction: 80%

- Effective group instruction
- Universal academic screening
- Academic interventions for struggling students



BEHAVIORAL RTI

Tier 3: High-Risk Students: 5%

- Functional Behavioral Assessments (FBAs)
- Behavior Intervention Plans (BIPs)
- Wrap-around RTI Team meetings
- Daily progress-monitoring

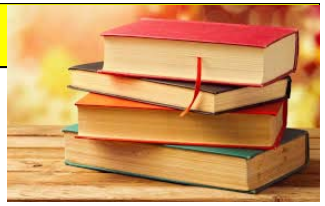
Tier 2: At-Risk Students: 15%

- Small-group interventions for emerging behavioral problems
- Regular progress-monitoring

Tier 1: Universal: Classroom Management: 80%

- Clear behavioral expectations
- Effective class-wide management strategies
- Universal behavior screening

Source: Grosche, M., & Volpe, R. J. (2013). Response-to-intervention (RTI) as a model to facilitate inclusion for students with learning and behaviour problems. *European Journal of Special Needs Education, 28*, 254-269. http://dx.doi.org/10.1080/08856257.2013.768452



The Struggling Student: Data Tells a Story…

Whenever a student has behavioral challenges, you look to data to tell a coherent story about the student. If any of these elements are missing, the 'data story' can become garbled:

- What academic/behavior problem(s) is the student experiencing?
- What is the student's current performance?
- What goal will you set to show that the behavior has improved?
- How will you use data as feedback to judge your intervention's effectiveness?

Jason fails to comply with adult requests during math instruction.

On a behavior report card (BRC), Jason is rated as 'poor' in compliance on 80% of days.

On a BRC, Jason will be rated as 'good' in compliance on 80% of days.

The math teacher will complete the BRC daily. The intervention will be reviewed after 6 instructional weeks.

Problem-Solving in Schools: Telling the Data Story

Teachers will want data to tell a student's intervention story when meeting with:

- **parent** and **student** to develop a plan to improve that student's course standing.
- the building's **RTI/MTSS Problem-Solving Team** to describe classroom intervention efforts.
- the **Section 504 Committee** to discuss whether the supports in a student's current 504 Accommodation Plan are adequate in the classroom.
- the **Special Education Eligibility Team** to review classroom efforts to support a student now being considered for LD.

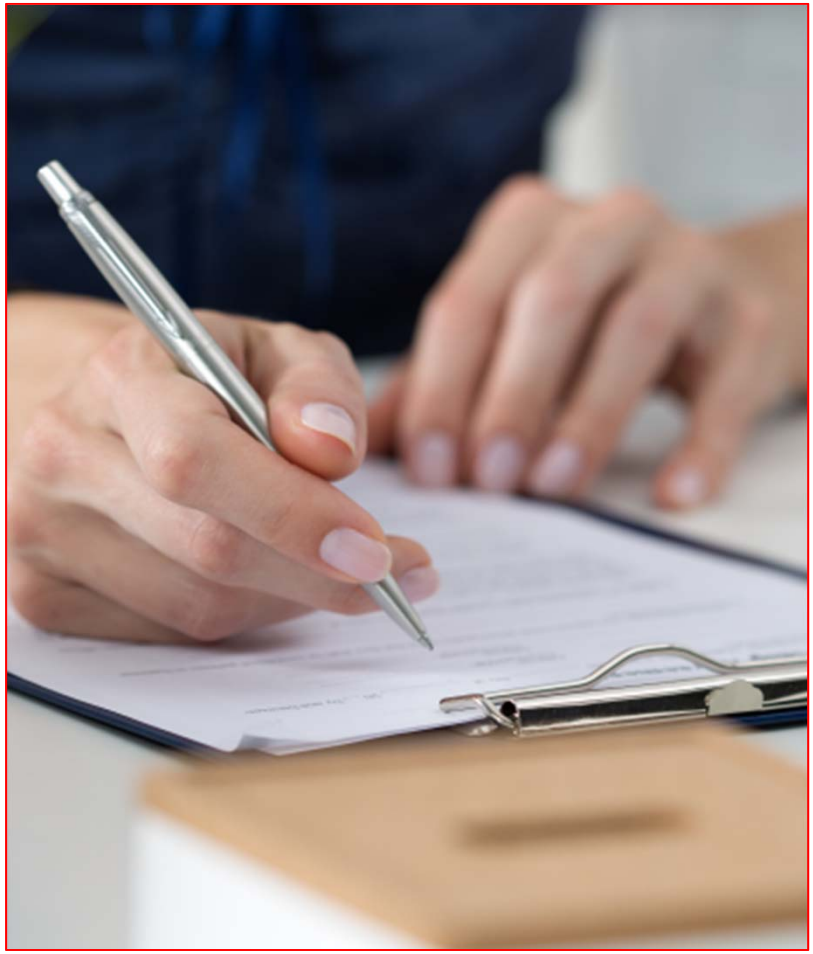
Workshop Topics

1. **Creating a Monitoring Plan.** What are the 7 steps to creating a plan to monitor a student's intervention progress?

2. **Data Collection: Behavior.** What tools are best to collect reliable behavioral data?

3. **Data Collection: Academics.** How can Curriculum-Based Measurement and other data tools help schools to track academic performance?

How to Monitor Basic Academic Skills: Curriculum-Based Measurement (CBM)



Classroom Data Tool: Curriculum-Based Measurement/Assessment

- **What It Is:** A series of brief measures of basic academic skills given under timed conditions and scored using standardized procedures.

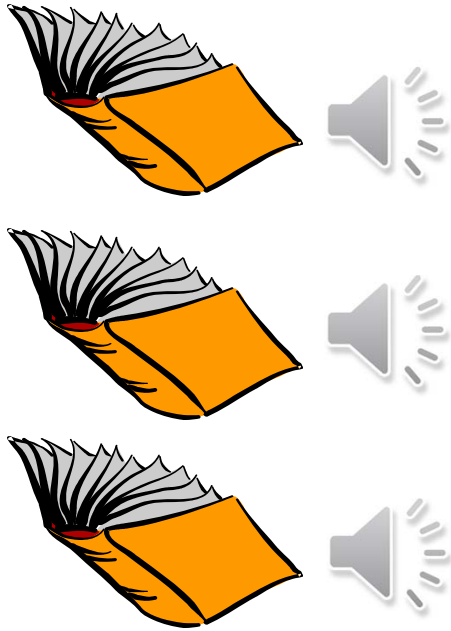
  CBM/CBA measures often include research-derived benchmark norms to assist in evaluating the student's performance.

Classroom Data Tool: Curriculum-Based Measurement/Assessment

- What It Can Measure:
  - Speed and accuracy in basic academic skills, such as:
    - letter naming: 1 min
    - number naming: 1 min
    - number sense: 1 min
    - oral reading fluency: 1 min
    - reading comprehension (maze): 3 mins
    - production of writing: 3 mins
    - math fact computation: 2 mins

Fluency Example: CBM Student Reading Samples: What Difference Does Fluency Make?

- *3rd Grade: 19 Words Per Minute*
- *3rd Grade: 70 Words Per Minute*
- *3rd Grade: 98 Words Per Minute*



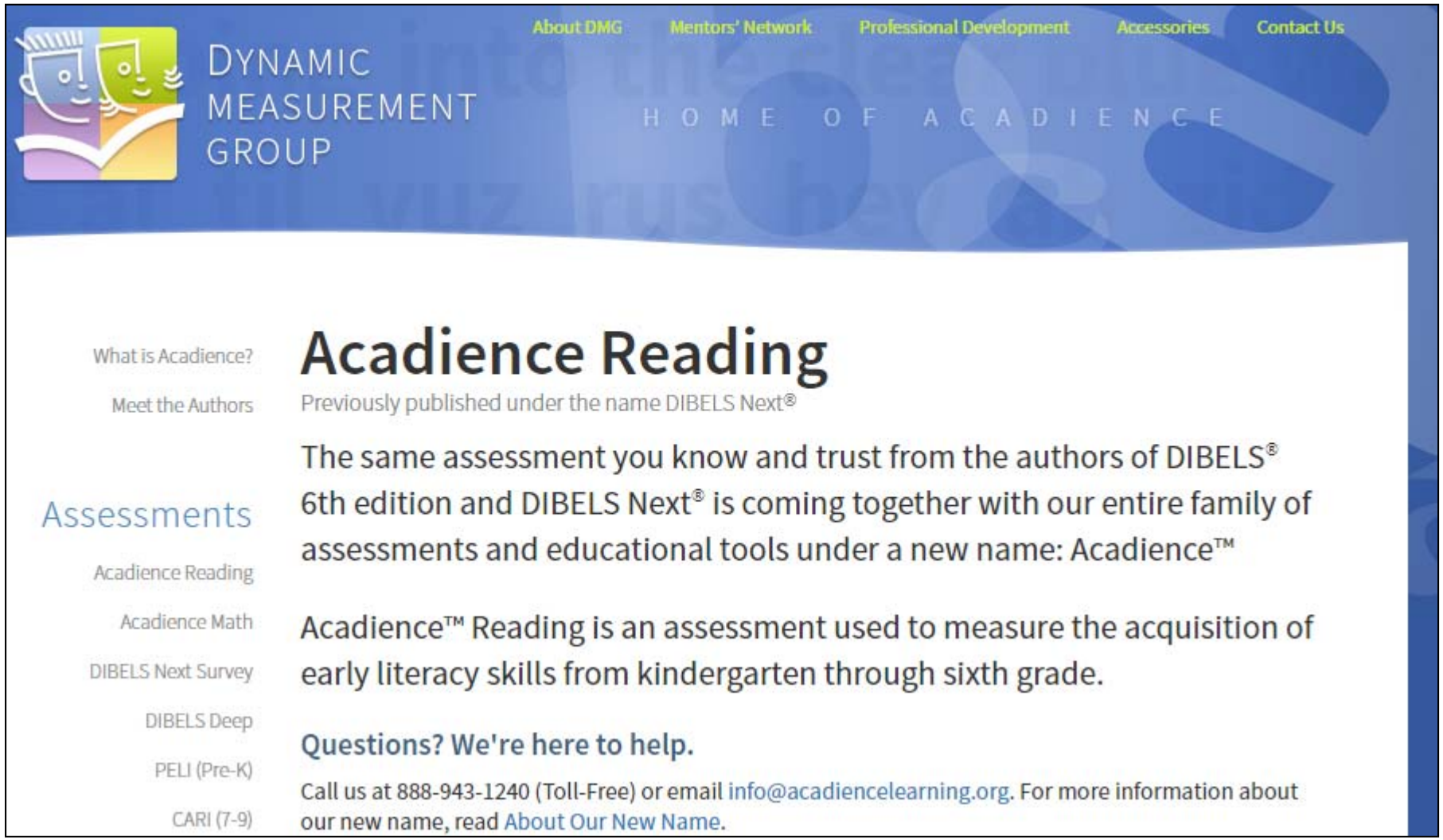
DIBELS: A Reading Assessment Toolkit

There are a variety of measurement products on the market that have been designed using CBM research.

The example presented here is a widely-used battery of fluency assessments for reading called DIBELS Next: https://dibels.org/dibelsnext.html. (DIBELS stands for Dynamic Indicators of Basic Early Literacy Skills.)
NOTE: DIBELS is being renamed Acadience Reading.

DIBELS Next is a well-researched collection of 6 CBM-type assessments available to teachers at no cost to download, print, and use with their students. There are enough materials to monitor students weekly.

Acadience: https://acadiencelearning.org/



Response to Intervention

Five Components of Reading

1. **Phonemic Awareness:** The ability to hear and manipulate sounds in words.
2. **Alphabetic Principle:** The ability to associate sounds with letters and use these sounds to form words.
3. **Fluency with Text:** The effortless, automatic ability to read words in connected text.
4. **Vocabulary:** The ability to understand (receptive) and use (expressive) words to acquire and convey meaning.
5. **Comprehension:** The complex cognitive process involving the intentional interaction between reader and text to convey meaning.

Source: Big ideas in beginning reading. University of Oregon. Retrieved September 23, 2007, from http://reading.uoregon.edu/index.php

DIBELS Next Reading Assessments

- First Sound Fluency: Phonemic Awareness
- Letter Naming Fluency: Alphabetics/Phonics
- Phoneme Segmentation Fluency: Alphabetics/Phonics
- Nonsense Word Fluency: Alphabetics/Phonics
- DIBELS Oral Reading Fluency (DORF)
- DIBELS Maze Passages (DAZE): Comprehension

How to Track Classroom Reading Interventions

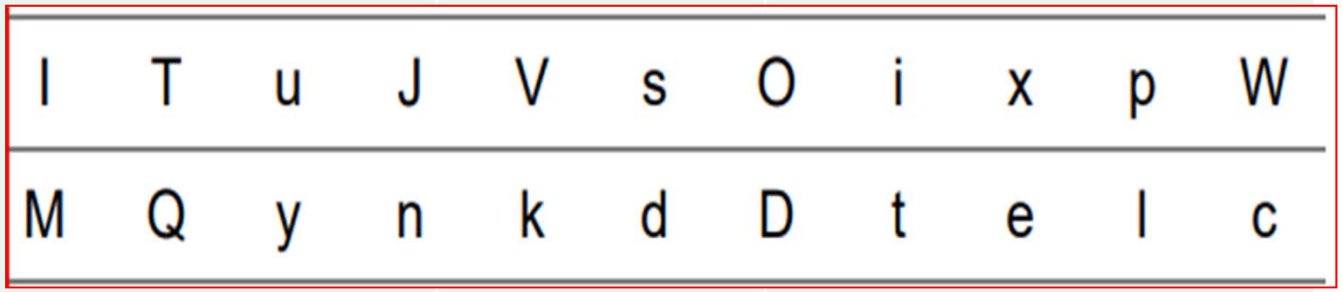
DIBELS Next Literacy Fluency Measures

Measure	Reading Component(s) Assessed	Time to administer	Grade Range/Screening
First Sound Fluency (FSF). The examiner reads words aloud from a list. The student says the first sound for each word.	Phonemic Awareness 	1 minute	• Kdg: Fall & Winter screenings

How to Track Classroom Reading Interventions

DIBELS Next Literacy Fluency Measures

Measure	Reading Component(s) Assessed	Time to administer	Grade Range/Screening
Letter Naming Fluency (LNF). The student reads aloud the names of letters from a sheet with randomly arranged letters.	Alphabetic Principle/ Phonics	1 minute	• Kdg: All year • Grade 1: Fall screening



l	T	u	J	V	s	O	i	x	p	W
M	Q	y	n	k	d	D	t	e	l	c

How to Track Classroom Reading Interventions

DIBELS Next Literacy Fluency Measures

Measure	Reading Component(s) Assessed	Time to administer	Grade Range/ Screening
Phoneme Segmentation Fluency (PSF). The examiner reads words aloud from a list. The student says the individual sounds making up each word.	Phonemic Awareness 	1 minute	• Kdg: Winter & Spring screenings • Grade 1: Fall screening

How to Track Classroom Reading Interventions

DIBELS Next Literacy Fluency Measures

Measure	Reading Component(s) Assessed	Time to administer	Grade Range/Screening
Nonsense Word Fluency (NWF). The student reads aloud from a list of VC and CVC nonsense words.	Alphabetic Principle/ Phonics	1 minute	• Kdg: Winter & Spring screenings • Grade 1: All year • Grade 2: Fall screening

m u s a v w e c m i v d o p

How to Track Classroom Reading Interventions

DIBELS Next Literacy Fluency Measures

Measure	Reading Component(s) Assessed	Time to administer	Grade Range/Screening
DIBELS Oral Reading Fluency (DORF). The student reads aloud from a text passage and is then asked to retell the main details of the reading.	Reading Fluency	1 minute for initial reading; 1 minute for student retell	• Grade 1: Winter & Spring Screenings • Grades 2-6: All year

DIBELS NEXT
Example: DORF

Total words: _____

Errors (include skipped words): – _____

Words correct: = _____

The Land Bridge

0	During the last ice age, the world looked much different than it does	13
13	today. Nearly all the land was covered with huge sheets of ice or glaciers.	27
27	Most of the world's water was trapped in these glaciers, and the water	40
40	level of the seas was low. A vast amount of land was above the water.	55
55	The narrow waterway between Asia and North America, the Bering	65
65	Strait, was mostly exposed land at that time. The land formed a narrow	78
78	bridge that connected Asia with North America. This land bridge was	89
89	cold and flat, and was covered by grass and shrubs. Before the formation	102
102	of the land bridge, early people who wanted to travel to North America	115
115	had to go by boat. Very few people actually made the voyage over the	129
129	water. Many more people traveled to North America when they were able	141

How to Track Classroom Reading Interventions

DIBELS Next Literacy Fluency Measures

Measure	Reading Component(s) Assessed	Time to administer	Grade Range/ Screening
DAZE. The student is given a Maze passage to read silently. For each response item, the student reviews 3 choices and selects the word that best completes the meaning of that part of the passage.	Reading Comprehension	3 minutes	• Grades 3-6: All year

DIBELS NEXT
Example: DAZE

Taking Great Nature Photographs

Many people love looking at a beautiful landscape or at waves crashing into rocks on a wind-swept beach. They may want to capture a [distant / need / bit] of it on camera in order to [share / blur / how] it with others. Because the subject [is / remember / when] so beautiful, they think, "This is [rather / whole / sure] to be a wonderful photograph!"

However, [pictures / taking / puddle] a good nature photograph can be [tricky / shooting / majestic]. If you're not careful, a majestic [will / help / mountain] may look like a distant pebble. [Wind / Crashing / Placing] waves can easily become a gray [vibrant / light / blur], with

DIBELS Next Reading Assessments

- First Sound Fluency: Phonemic Awareness
- Letter Naming Fluency: Alphabetics/Phonics
- Phoneme Segmentation Fluency: Alphabetics/Phonics
- Nonsense Word Fluency: Alphabetics/Phonics
- DIBELS Oral Reading Fluency (DORF)
- DIBELS Maze Passages (DAZE): Comprehension

Curriculum-Based Measures (CBMs) from Intervention Central

CBM	*Skill Area*	*Activity*
Letter Sound Fluency/Letter Name Fluency	Alphabetics/ Phonics	1 Minute: Student **reads letter names** or **sounds** from a **randomly generated list.**
Oral Reading Fluency	Reading Fluency	1 Minute: Student **reads aloud** from a **text passage.**
Reading Comprehension Fluency (Maze)	Reading Comprehension	3 Minutes: Student **reads silently** from a **Maze passage** and selects correct word in each choice item that restores meaning to the passage.
Early Math Fluency	Number Sense	1 Minute: Student completes an Early Math Fluency probe: **(1) Quantity Discrimination; (2) Missing Number;** or **(3) Number Identification**
Computation Fluency	Math Fact Fluency	2 Minutes: Student **completes math facts** and receives credit for each **correct digit.**
Written Expression	Mechanics/ Conventions of Writing	4 Minutes: Student reads a story-starter (sentence stem), then **produces a writing sample** that can be scored for **Total Words Written, Correctly Spelled Words, Correct Writing Sequences.**

Letter Knowledge

- The ability of young children to identify letter names and sounds quickly and accurately gives information about their phonics/alphabetics skills, which are necessary tools for reading.

Five Core Components of Reading

- "Phonemic Awareness: The ability to hear and manipulate sounds in words.
- Alphabetic Principle: The ability to associate sounds with letters and use these sounds to form words.
- Fluency with Text: The effortless, automatic ability to read words in connected text.
- Vocabulary: The ability to understand (receptive) and use (expressive) words to acquire and convey meaning.
- Comprehension: The complex cognitive process involving the intentional interaction between reader and text to convey meaning."

SOURCE: Big ideas in beginning reading. University of Oregon. Retrieved September 23, 20012, from http://reading.uoregon.edu/index.php

- **Letter Knowledge: Letter Name Fluency (LNF)** [1 minute]: The student is given a random list of upper- and lower-case letters and identifies the names of as many letters as possible.

Curriculum-Based Measurement: Letter Name Fluency (LNF) Norms

(Riverside, 2013)*

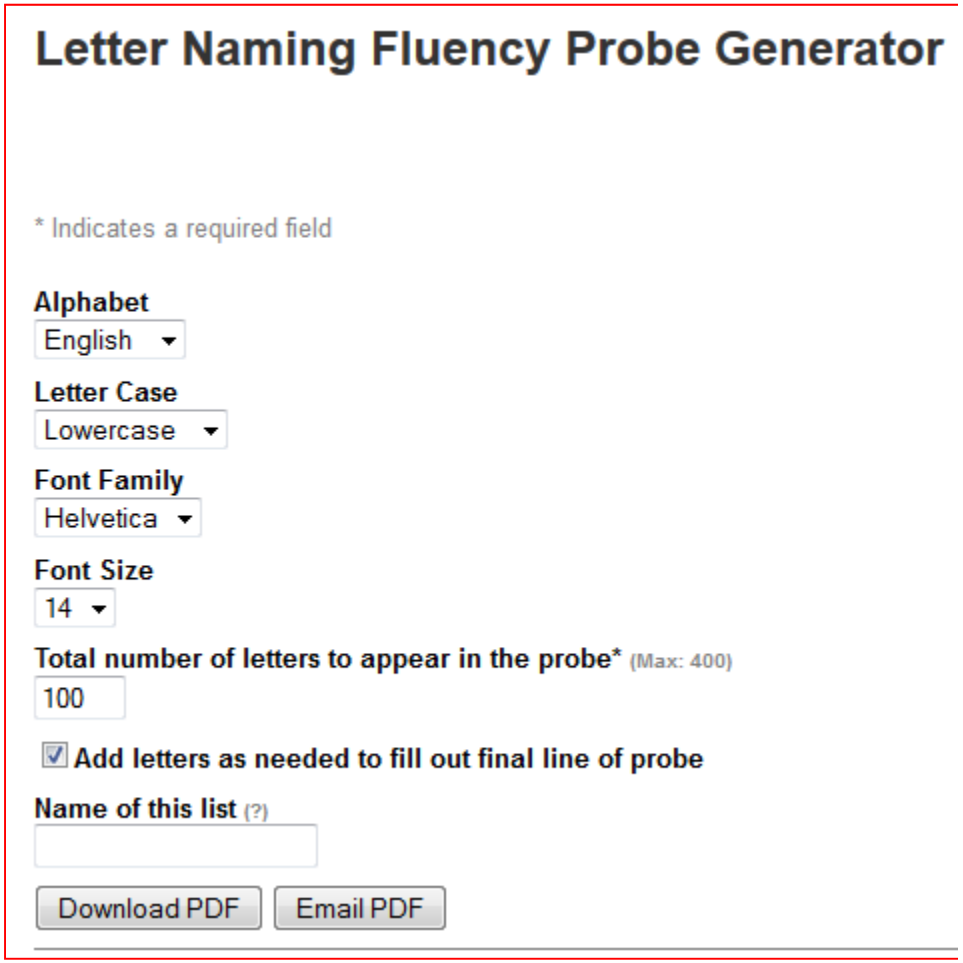
In the **CBM-Letter Name Fluency (LNF)** task, the student is given a random list of upper- and lower-case letters and has 1 minute to identify the names of as many letters as possible.

Grade	Percentile	Fall LNF (Riverside, 2013)	Winter LNF (Riverside, 2013)	Spring LNF (Riverside, 2013)	Weekly Growth (Calculated across 32 Instructional Wks)
K	50%ile	19	35	45	0.81
	20%ile	5	22	36	0.97
	10%ile	2	13	29	0.84
1	50%ile	40	56	68	0.88
	20%ile	28	42	49	0.66
	10%ile	20	34	42	0.69

Letter Name/Sound Fluency Probe Generator

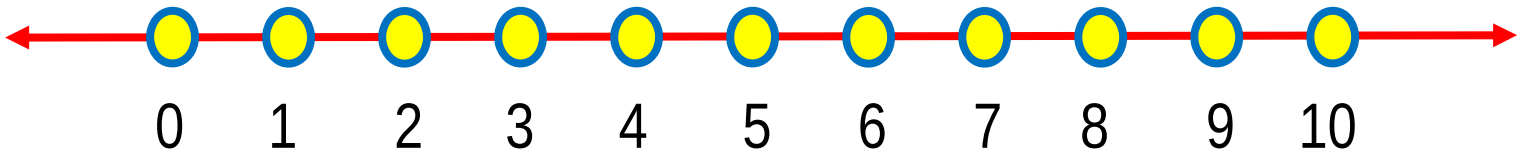
http://www.interventioncentral.org

Use this free online application to design and create Letter Name and Letter Sound Fluency Probes.



Early Math Fluency: Measuring 'Number Sense'

- Early Math Fluency measures track primary-grade students' acquisition of number sense (defined as mastery of internal number line)



- **Early Math Fluency: Quantity Discrimination** [1 minute]: The student is given a worksheet with number pairs and, for each pair, identifies the larger of the two numbers.

4	12

Quantity Discrimination (QD): 1 Minute: The student is presented with pairs of numbers randomly sampled from 1-20 and must identify the larger number in each pair.

Grade	Fall QD (Chard et al., 2005)	Fall:+/-1 SD (≈16th%ile to 84th%ile)	Winter QD (Chard et al., 2005)	Winter: +/-1 SD (≈16th%ile to 84th%ile)	Spring QD (Chard et al., 2005)	Spring: +/-1 SD (≈16th%ile to 84th%ile)	Weekly Growth
K	15	8↔22	20	8↔32	23	12↔34	0.25
1	23	16↔30	30	21↔39	37	28↔46	0.44

Source: Chard, D. J., Clarke, B., Baker, S., Otterstedt, J., Braun, D., & Katz, R. (2005). Using measures of number sense to screen for difficulties in mathematics: Preliminary findings. Assessment for Effective Intervention, 30(3), 3-14.

- **Early Math Fluency: Missing Number** [1 minute]: The student is given a worksheet with 4-digit number series with one digit randomly left blank and, for each series, names the missing number. **14 __ 16 17**

Missing Number (MN): 1 Minute: The student is presented with response items consisting of 3 sequential numbers with one of those numbers randomly left blank. (Each 3-number series is randomly generated from the pool of numbers 1-20.) The student attempts to name the missing number in each series.

Grade	Fall MN (Chard et al., 2005)	Fall: +/-1 SD (≈16th%ile to 84th%ile)	Winter MN (Chard et al., 2005)	Winter: +/-1 SD (≈16th%ile to 84th%ile)	Spring MN (Chard et al., 2005)	Spring: +/-1 SD (≈16th%ile to 84th%ile)	Weekly Growth
K	3	0↔7	10	3↔17	14	7↔21	0.34
1	9	3↔15	17	11↔23	20	14↔26	0.34

Source: Chard, D. J., Clarke, B., Baker, S., Otterstedt, J., Braun, D., & Katz, R. (2005). Using measures of number sense to screen for difficulties in mathematics: Preliminary findings. Assessment for Effective Intervention, 30(3), 3-14.

- **Early Math Fluency: Number Identification** [1 minute]: The student is given a worksheet randomly generated numbers and reads off as many as possible within the time limit.

34	37	50	38	1

Number Identification (NID): 1 Minute: The student is presented with a randomly generated series of numbers ranging from 1-20 and names as many of those numbers aloud as time allows.

Grade	Fall NID (Chard et al., 2005)	Fall: +/-1 SD (≈16th%ile to 84th%ile)	Winter NID (Chard et al., 2005)	Winter: +/-1 SD (≈16th%ile to 84th%ile)	Spring NID (Chard et al., 2005)	Spring: +/-1 SD (≈16th%ile to 84th%ile)	Weekly Growth
K	14	0↔28	45	27↔63	56	38↔74	1.31
1	34	18↔50	53	36↔70	62	46↔78	0.88

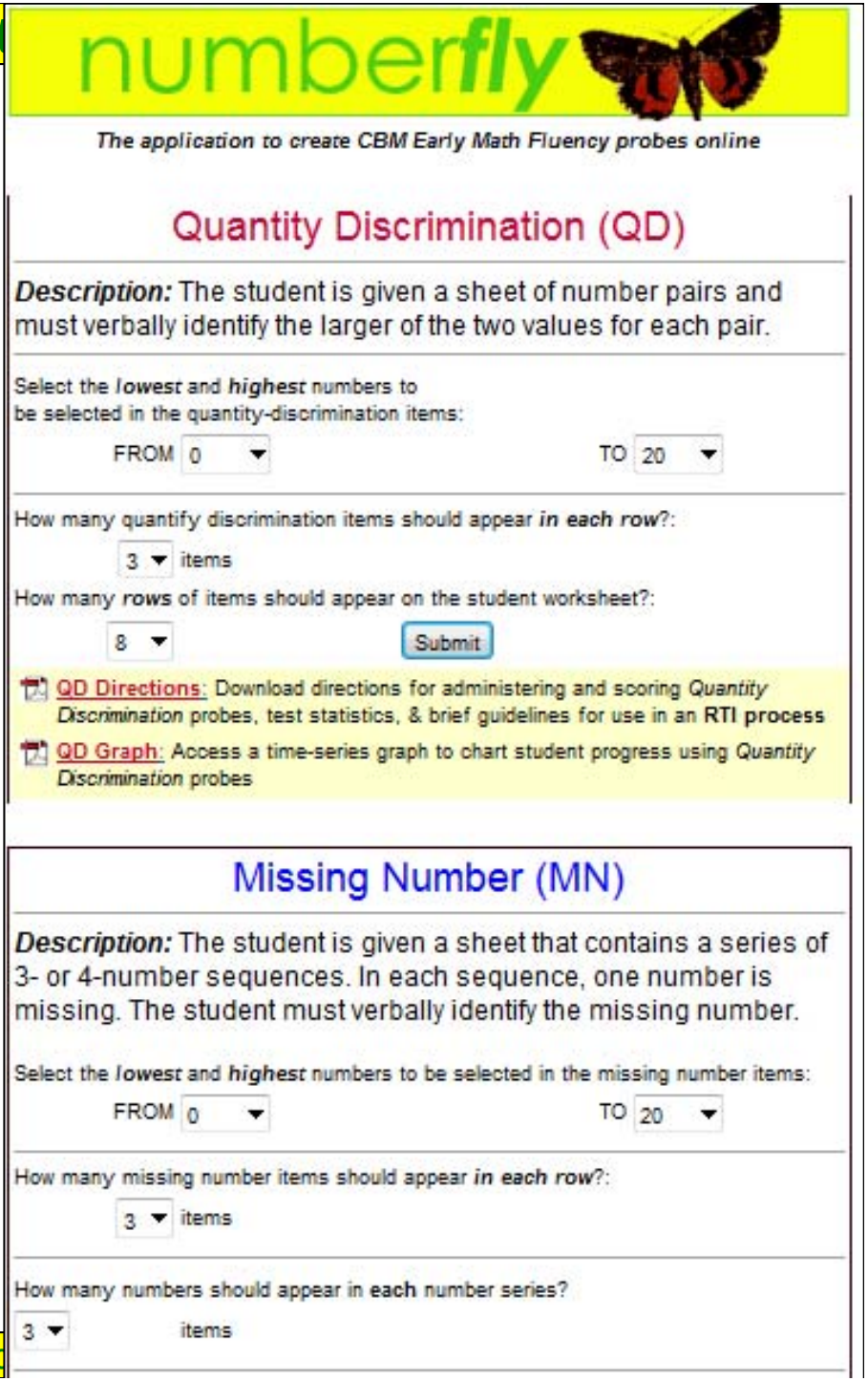
Source: Chard, D. J., Clarke, B., Baker, S., Otterstedt, J., Braun, D., & Katz, R. (2005). Using measures of number sense to screen for difficulties in mathematics: Preliminary findings. Assessment for Effective Intervention, 30(3), 3-14.

Numberfly Early Math Fluency Generator

http://www.interventioncentral.org

Use this free online application to design and create Early Math Fluency Probes, including:

- Quantity Discrimination
- Missing Number
- Number Identification



Math Computation Fluency

- Students should have fluent recall of basic-operation math facts to prepare them for demanding math courses in middle and high school.

Benefits of Automaticity of 'Arithmetic Combinations'

(Gersten, Jordan, & Flojo, 2005)

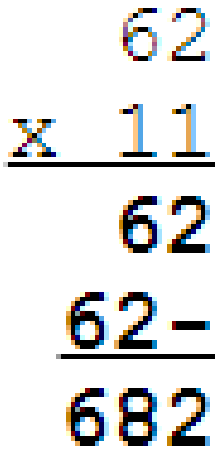
- There is a strong correlation between poor retrieval of arithmetic combinations ('math facts') and global math delays
- Automatic recall of arithmetic combinations frees up student 'cognitive capacity' to allow for understanding of higher-level problem-solving
- By internalizing numbers as mental constructs, students can manipulate those numbers in their head, allowing for the intuitive understanding of arithmetic properties…

Source: *Gersten, R., Jordan, N. C., & Flojo, J. R. (2005). Early identification and interventions for students with mathematics difficulties. Journal of Learning Disabilities, 38, 293-304.*

- **Math Computation Fluency** [2 minutes]: The student is given a math-fact worksheet and completes as many problems as possible. The worksheet is scored for number of correct digits.

Example: Student Worksheet

Example: Answer Key



- **Math Computation Fluency** [2 minutes]: The student is given a math-fact worksheet and completes as many problems as possible. The worksheet is scored for number of correct digits.

Curriculum-Based Measurement: Math Computation (Adapted from Deno & Mirkin, 1977)	
Grade	**Digits Correct in 2 Minutes**
1-3	Frustration 20 or less Instructional 21-40 Mastery 41 or higher
4 & Up	Frustration 40 or less Instructional 41-80 Mastery 81 or higher
Comments: These math computation norms are still widely referenced. They are best regarded as a rough indicator of 'typical' student math computation skills.	

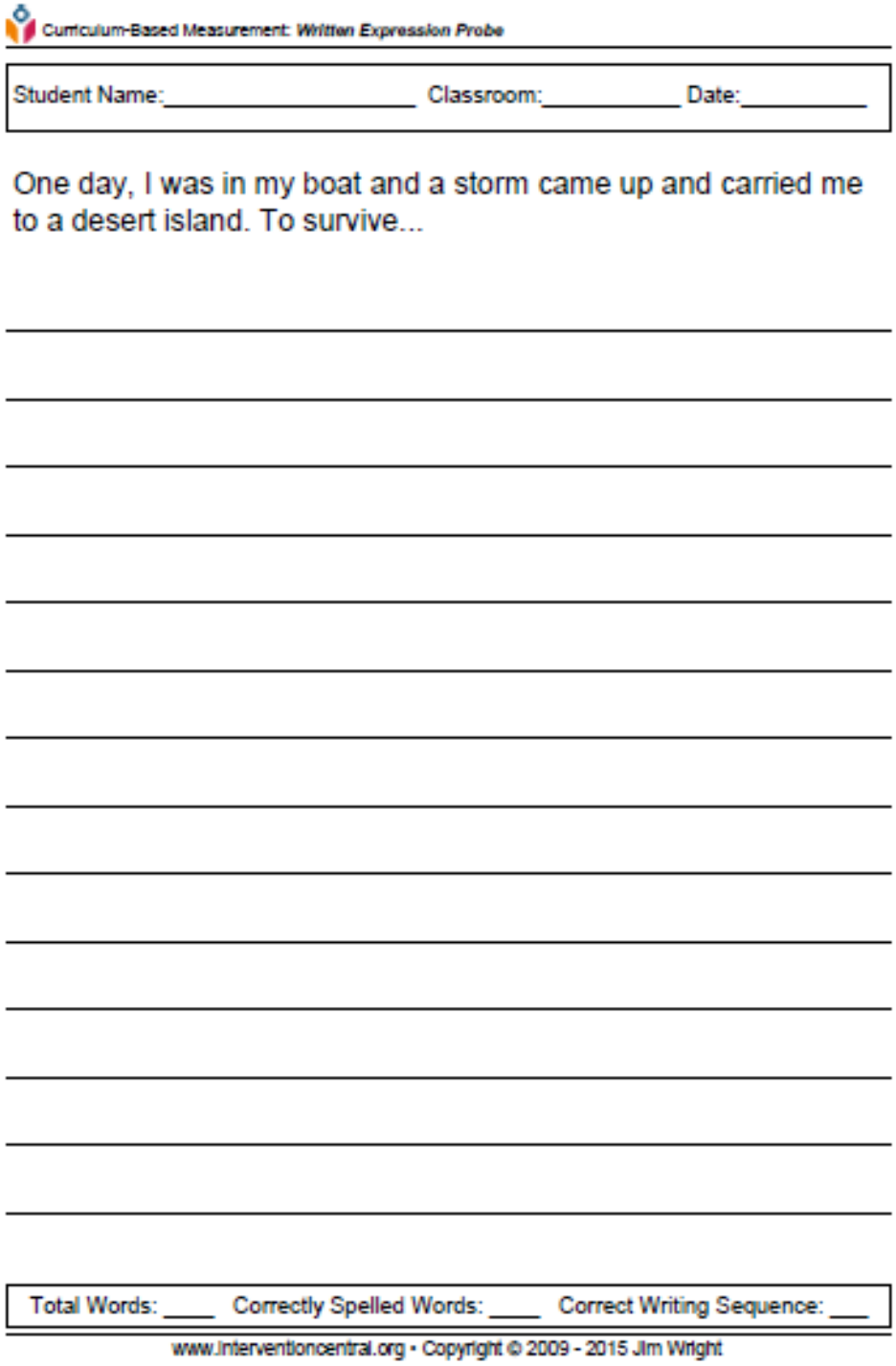
Mechanics & Conventions of Writing

- Tracking student growth in emerging writing skills can be confusing and time-consuming for teachers.

  However, Curriculum-Based Measurement-Written Expression (CBM-WE) is an efficient, reliable method of formative student assessment that yields numeric indicators that are instructionally useful--such as total words written, correctly spelled words, and correct writing sequences.

CBM-Written Expression: Sample Story Starter

Source: Writing Probe Generator. Available at http://www.interventioncentral.org/teacher-resources/curriculum-based-measurement-probes-writing



Curriculum-Based Measurement: *Written Expression Probe*

Student Name:_____ Classroom:_____ Date:_____

One day, I was in my boat and a storm came up and carried me to a desert island. To survive...

Total Words: ____ Correctly Spelled Words: ____ Correct Writing Sequence: ___

CBM Writing Assessment: Scoring

Total Words:

I woud drink water from the ocean and I woud eat the fruit off of the trees. Then I woud bilit a house out of trees, and I woud gather firewood to stay warm. I woud try and fix my boat in my spare time.

Total Words = 45

- CBM-WE: **Total Words Written** [4 Minutes]. The student's writing sample is scored for the total words written.

Total Words Written (TWW): This measure is a count of the total words written during the CBM-WE assessment.

Grade	Fall TWW (Malecki & Jewell, 2003)	Fall:+/-1 SD (≈16th%ile to 84th%ile)	Spring TWW (Malecki & Jewell, 2003)	Spring: +/-1 SD (≈16th%ile to 84th%ile)	Weekly Growth (Tadatada, 2011)
1	8	3↔13	14	7↔21	0.45
2	24	14↔34	31	19↔43	0.43
3	36	23↔49	36	24↔48	0.35
4	41	30↔52	46	30↔62	0.25
5	51	34↔68	67	43↔91	--
6	44	31↔57	58	44↔72	--

Source: Gansle, K. A., VanDerHeyden, A. M., Noell, G. H., Resetar, J. L., & Williams, K. L. (2006). The technical adequacy of curriculum-based and rating-based measures of written expression for elementary school students. School Psychology Review, 35, 435-450.

CBM Writing Assessment: Scoring

Correctly Spelled Words:

I woud drink water from the ocean and I woud eat the fruit off of the trees. Then I woud bilit a house out of trees, and I woud gather firewood to stay warm. I woud try and fix my boat in my spare time.

Correctly Spelled Words = 39

- **CBM-WE: Correctly Spelled Words** [4 Minutes]. The student's writing sample is scored for the number of words spelled correctly.

Correctly Spelled Words (CSW): This measure is a count of correctly spelled words written during the CBM-WE assessment.

Grade	Fall CSW (Malecki & Jewell, 2003)	Fall:+/-1 SD (≈16th%ile to 84th%ile)	Spring CSW (Malecki & Jewell, 2003)	Spring: +/-1 SD (≈16th%ile to 84th%ile)	Weekly Growth (Tadatada, 2011)
1	5	1↔9	10	3↔17	0.45
2	20	10↔30	27	15↔39	0.46
3	32	19↔45	33	21↔45	0.37
4	38	26↔50	44	29↔59	0.26
5	48	31↔65	65	42↔88	--
6	42	29↔55	56	41↔71	--

Source: Gansle, K. A., VanDerHeyden, A. M., Noell, G. H., Resetar, J. L., & Williams, K. L. (2006). The technical adequacy of curriculum-based and rating-based measures of written expression for elementary school students. School Psychology Review, 35, 435-450.

CBM Writing Assessment: Scoring

Correct Writing Sequences:

I *woud* drink water from the ocean and I *woud* eat the fruit off of the trees. Then I *woud bilit* a house out of trees, and I *woud* gather firewood to stay warm. I *woud* try and fix my boat in my spare time.

Correct Writing Sequences = 37

- CBM-WE: Correct Writing Sequences [4 Minutes]. A point is scored whenever two adjacent units of writing (e.g., two words appearing next to each other) are correct in punctuation, capitalization, spelling, and syntactical and semantic usage.)

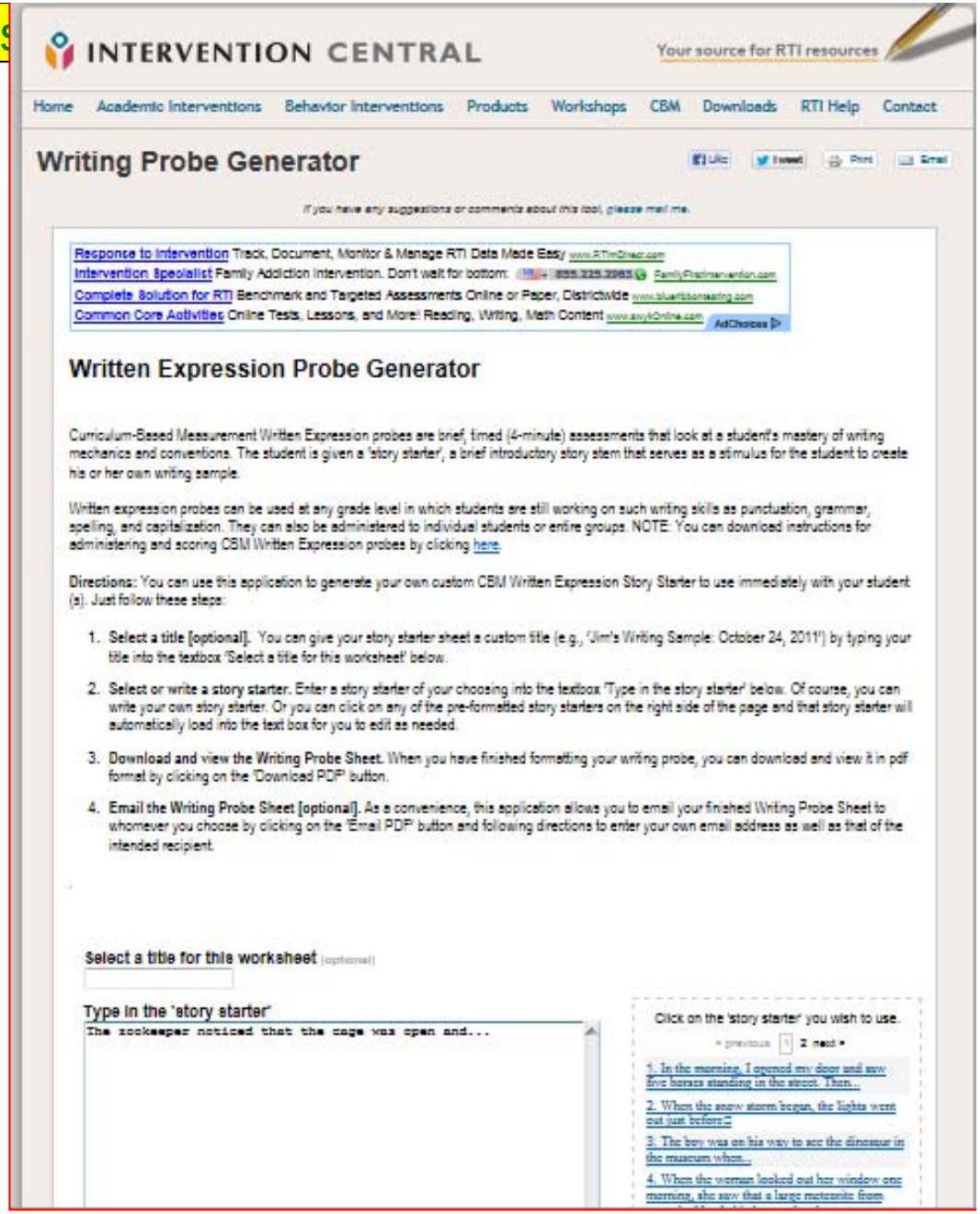
Correct Writing Sequences (CWS): This measure is a tabulation of correct 'writing sequences' written during the CBM-WE assessment. One Correct Writing Sequence is scored whenever two adjacent units of writing (e.g., two words appearing next to each other) are found to be correct in their punctuation, capitalization, spelling, and syntactical and semantic usage.

Grade	Fall CWS (Malecki & Jewell, 2003)	Fall:+/-1 SD (≈16th%ile to 84th%ile)	Spring CWS (Malecki & Jewell, 2003)	Spring: +/-1 SD (≈16th%ile to 84th%ile)	Weekly Growth (Tadatada, 2011)
1	2	0↔4	7	1↔13	0.36
2	15	5↔25	24	11↔37	0.44
3	28	14↔42	31	18↔44	0.35
4	38	25↔51	42	26↔58	0.22
5	46	28↔64	63	40↔86	--
6	41	27↔55	54	37↔71	--

Source: Gansle, K. A., VanDerHeyden, A. M., Noell, G. H., Resetar, J. L., & Williams, K. L. (2006). The technical adequacy of curriculum-based and rating-based measures of written expression for elementary school students. School Psychology Review, 35, 435-450.

Writing Probe Generator

Create a probe to assess the mechanics and conventions of student writing.



URL: http://www.interventioncentral.org/tools/writing-probe-generator

Curriculum-Based Measures (CBMs) from Intervention Central

CBM	*Skill Area*	*Activity*
Letter Sound Fluency/Letter Name Fluency	Alphabetics/ Phonics	1 Minute: Student **reads letter names** or **sounds** from a **randomly generated list.**
Oral Reading Fluency	Reading Fluency	1 Minute: Student **reads aloud** from a **text passage.**
Reading Comprehension Fluency (Maze)	Reading Comprehension	3 Minutes: Student **reads silently** from a **Maze passage** and selects correct word in each choice item that restores meaning to the passage.
Early Math Fluency	Number Sense	1 Minute: Student completes an Early Math Fluency probe: **(1) Quantity Discrimination; (2) Missing Number;** or **(3) Number Identification**
Computation Fluency	Math Fact Fluency	2 Minutes: Student **completes math facts** and receives credit for each **correct digit.**
Written Expression	Mechanics/ Conventions of Writing	4 Minutes: Student reads a story-starter (sentence stem), then **produces a writing sample** that can be scored for **Total Words Written, Correctly Spelled Words, Correct Writing Sequences.**

Curriculum-Based Measures (CBMs) from Intervention Central

CBM	*Skill Area*	*Activity*
Letter Sound Fluency/Letter Name	Alphabetics/ Phonics	1 Minute: Student reads letter names or sounds from a randomly generated list
		assage.
		ze passage that restores
		luency probe: mber; or (3)
	Fluency	d receives credit for each correct digit.
Written Expression	Mechanics/ Conventions of Writing	4 Minutes: Student reads a story-starter (sentence stem), then produces a writing sample that can be scored for Total Words Written, Correctly Spelled Words, Correct Writing Sequences.

Curriculum-Based Measurement: Activity

At your tables:

- Select a CBM reviewed at today's training that you are interested in using back at your school.
- Discuss how you might use that CBM in your own instruction or share with other educators.

Be prepared to report out.

Monitoring Student Progress on Classroom Interventions: Five Big Ideas. These 5 big ideas can help teachers to more effectively and efficiently collect and interpret student data in the classroom … pp. 2-3

Data Collection: 5 Big Ideas…

- *Define the student problem clearly.* Before selecting a method of data collection to monitor student progress, the teacher must first define the academic or behavioral problem clearly (Christ, 2008).These are called 'problem identification [ID] statements'.

  Problem ID statements can often be improved with information about frequency, intensity, or other objective data to clarify the severity of the problem. 'Sam never turns in homework' can be improved with information about frequency, e.g., 'Sam turns in homework only about 25 percent of the time.'

1

Data Collection: 5 Big Ideas…

- *Take advantage of practical classroom progress-monitoring tools.* Teachers can use lots of data-collection methods to track student progress on academic or behavioral interventions: e.g., grades, rubrics, interviews, behavior report cards, and checklists.

  Such 'informal' measures may appear to lack the rigor of more formal norm-referenced assessments. But the reduced stakes of classroom interventions mean that measures used to track success on these general-education interventions can also be less rigorous (Hosp, 2008).

2

Data Collection: 5 Big Ideas…

- *Baseline: Know the student's starting point.* When preparing to monitor a student on intervention, the teacher typically first collects 'baseline' data. The instructor assesses the student's academic or behavioral performance on one or more occasions *before* the intervention starts—and uses this preliminary data to estimate that student's starting point or current level of performance (Hixson, Christ & Bruni, 2014).

  Baseline information is also used as a point of comparison throughout the intervention period to judge whether that student has made progress.

3

Data Collection: 5 Big Ideas…

- *Set an intervention goal.* Before launching an intervention and monitoring progress, the teacher establishes a student outcome goal (Hixson, Christ & Bruni, 2014). To compute this outcome goal, the instructor decides how many instructional weeks the intervention will last and calculates a 'realistic but ambitious' performance goal for the student to meet or exceed by the end of the intervention period.

  The intervention goal allows the teacher a simple, unambiguous standard against which to judge the success of the intervention.

4

Data Collection: 5 Big Ideas…

- *Reduce the 'noise' in the data.* All real-world student performance data contains both real information and an element of error (Hosp, 2008).

  Error in measurement is a natural element of data collection and can arise from many sources; e.g., fluctuations in mood and motivation; variability in data collection, scoring, and interpretation; the presence of environmental distractions. Error in data collection is ever-present. Teachers, however, can take action to minimize the 'noise', or 'error', and to maximize the 'signal', or 'true' information, that data contains.

5

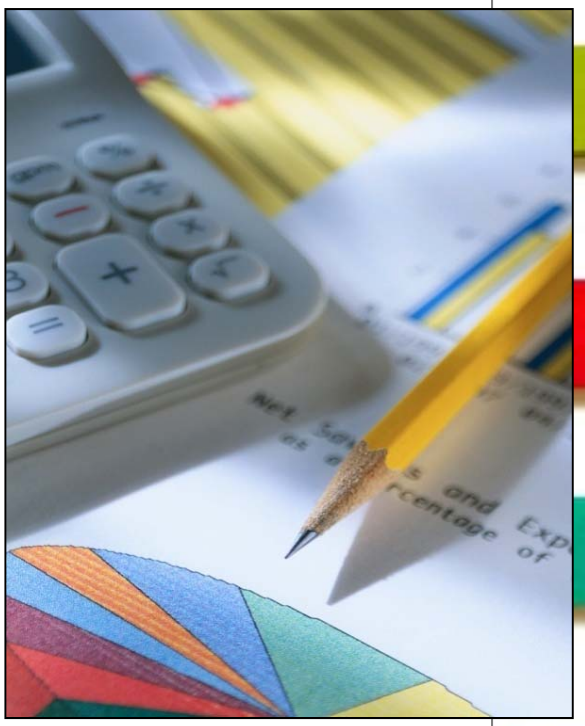
Big Ideas in Data Collection: Activity

- Discuss the 5 big ideas presented here (handout: pp. 2-3).
- Pick **one** of the data-collection ideas that you feel is most important for classroom teachers to remember.

Monitoring Student Progress on Classroom Interventions: Five Big Ideas

1. Define the student problem clearly.
2. Take full advantage of practical progress-monitoring tools available in the classroom
3. Baseline: Know the student's starting point.
4. Set an intervention goal.
5. Reduce the 'noise' in the data.

Behavior Management: Show Me the Data. What are feasible 'go-to' methods educators can use to track almost any classroom behavior?



Activity: Think of a student…

- Think of a student whom you work with that displays challenging classroom behaviors.
- Discuss this student with your group.
- Through the rest of this workshop segment on collecting behavioral data, think about how you might use the various assessment methods on this student.

Collecting Behavioral Data: 4 Methods

Behavior Report Cards

Checklists

Behavior Frequency Count

Behavior Logs/Scatterplot

Classroom Data Tool: Behavior Report Cards

- **What It Is:** A teacher-created rating scale (online) that measures student classroom behaviors. A behavior report card contains 3-4 rating items describing goal behaviors. Each item includes an appropriate rating scale (e.g., YES/NO). At the end of an observation period, the rater fills out the report card as a summary snapshot of the student's behavior.

Classroom Data Tool: Behavior Report Card

- What It Can Measure:

  - ❑ General behaviors (e.g., complies with teacher requests; waits to be called on before responding)
  - ❑ Academic 'enabling' behaviors (e.g., has all necessary work materials; writes down homework assignment correctly and completely, etc.)

Response to Intervention

Ricky: Daily Report Card

Student Name: _____ Date: _____

Rater: Wright Classroom: _____

Directions: Review each of the Behavior Report Card items below. For each item, rate the degree to which the student showed the behavior or met the behavior goal.

Total YES Score:___ Total NO Score: ___

	Language Arts	Math	Science	Social Studies	Study Hall
Follows class rules with no more than 2 rule violations per session. Did the student succeed in this behavior goal? ❑ YES ❑ NO	__Y__N	__Y__N	__Y__N	__Y__N	__Y__N
Completes assignments within the allocated time. Did the student succeed in this behavior goal? ❑ YES ❑ NO	__Y__N	__Y__N	__Y__N	__Y__N	__Y__N
Completes assignments with 80% accuracy. Did the student succeed in this behavior goal? ❑ YES ❑ NO	__Y__N	__Y__N	__Y__N	__Y__N	__Y__N
Complies with teacher requests. (2 or fewer noncompliance per period) Did the student succeed in this behavior goal? ❑ YES ❑ NO	__Y__N	__Y__N	__Y__N	__Y__N	__Y__N

Response to Intervention

Ricky: Daily Report Card

Student Name: _____ Date: _____

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Completes assignments with 80% accuracy. Did the student succeed in this behavior goal? ❑ YES ❑ NO	__Y__N	__Y__N	__Y__N	__Y__N	__Y__N
Complies with teacher requests. (2 or fewer noncompliance per period) Did the student succeed in this behavior goal? ❑ YES ❑ NO	__Y__N	__Y__N	__Y__N	__Y__N	__Y__N

Follows class rules--no more than 1 rule violation per session.

Did the student succeed in this behavior goal?

❑ YES ❑ NO

1

Response to Intervention

Ricky: Daily Report Card

Student Name: _____ Date: _____

Rater: Wright Classroom: _____

Directions: Review each of the Behavior Report Card items below. For each item, rate the degree to which the student showed the behavior or met the behavior goal.

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	Language Arts	Math	Science	Social Studies	Study Hall
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Completes assignments within the time allocated. Did the student succeed in this behavior goal? ❑ YES ❑ NO					
Completes assignments with 80% accuracy. Did the student succeed in this behavior goal? ❑ YES ❑ NO					
Complies with teacher requests. (2 or fewer noncompliance per period) Did the student succeed in this behavior goal? ❑ YES ❑ NO	__Y__N	__Y__N	__Y__N	__Y__N	__Y__N

Completes independent assignments within time allocated.

Did the student succeed in this behavior goal?

❑ YES ❑ NO

1

Response to Intervention

Ricky: Daily Report Card

Student Name: _____ Date: _____

Rater: Wright Classroom: _____

Directions: Review each of the Behavior Report Card items below. For each item, rate the degree to which the student showed the behavior or met the behavior goal.

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Completes assignments within the allocated time. Did the student succeed in this beha ❑ YES ❑ NO					
Completes assignments with 8 Did the student succeed in t ❑ YES ❑ NO					
Complies with teacher requests. (2 noncompliance per period) Did the student succeed in this behavior goal? ❑ YES ❑ NO	__Y__N	__Y__N	__Y__N	__Y__N	__Y__N

Completes assignments with at least 80% accuracy.

Did the student succeed in this behavior goal?

❑ YES ❑ NO

1

Response to Intervention

Ricky: Daily Report Card

Student Name: _____ Date: _____

Rater: Wright Classroom: _____

Directions: Review each of the Behavior Report Card items below. For each item, rate the degree to which the student showed the behavior or met the behavior goal.

Total YES Score:___ Total NO Score: ___

	Language Arts	Math	Science	Social Studies	Study Hall
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Completes assignments with 80% acc Did the student succeed in this beh ❑ YES ❑ NO					
Complies with teacher requ noncompliance per period) Did the student succeed in this b ❑ YES ❑ NO					

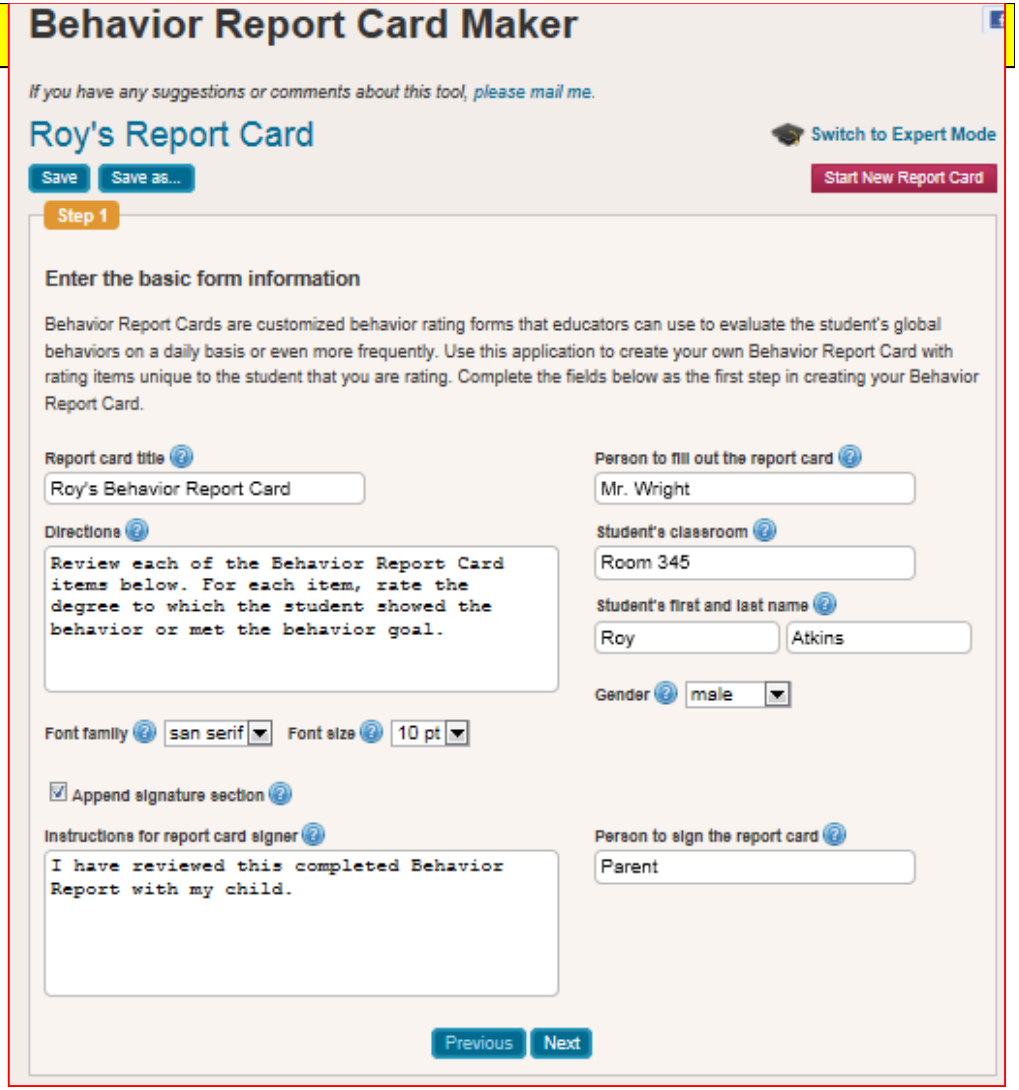
Complies with teacher requests--no more than 1 incident of noncompliance per period.

Did the student succeed in this behavior goal?

❑ YES ❑ NO

1

Free Online App:
Behavior Report Card Maker.
Teachers can use this free app to create and download (in PDF format) customized Behavior Report Cards.



Classroom Data Tool: Checklist

- **What It Is:** The dividing of a larger behavioral task or sequence into constituent steps, sub-skills, or components. (See pp. 21-23).

  Each checklist element is defined in a manner that allows the observer to make a clear judgment (e.g., YES/NO, COMPLETED/NOT COMPLETED) about whether the student is displaying it.

Intervention Central

Classroom Data Tool: Checklist

- What It Can Measure:

  - ❑ Step-by-step cognitive strategies
  - ❑ Behavioral routines
  - ❑ Generalization: Target behavior carried out across settings

Classroom Data Tool: Checklist

Checklist Example: Classroom Routine

Start-of-Class Checklist
❑ AT THE START OF CLASS, THE STUDENT:
❑ has a sharpened pencil.
❑ has paper for taking notes.
❑ has homework ready to turn in.
❑ has put her cell phone away in her backpack.
❑ has cleared her desk of unneeded materials.
❑ is sitting quietly.
❑ is working on the assigned start-of-class activity.

2

Classroom Data Tool: Checklist

How to Disagree Respectfully
☐ Remain calm.
☐ Listen actively and ask clarifying questions.
☐ Think about the other person's point of view.
☐ Explain your viewpoint clearly.
☐ Act nonjudgmentally.

2

Advantages of Behavior Checklists…

1. DEFINING BEHAVIORAL EXPECTATIONS. The teacher creates a behavioral checklist to clarify behavioral expectations.

2. TEACHING THE BEHAVIOR. The teacher uses the checklist as a guide to teach the behavior to the student.

3. REINFORCING SHARED EXPECTATIONS. The checklist encourages multiple educators working with the student to share the same behavioral expectations.

4. PROMPTING THE BEHAVIOR. Adults can use the checklist to prompt the student to show desired behaviors.

5. SELF-MANAGING THE BEHAVIOR. The student can use the checklist to self-evaluate/self-monitor performance of the behavior.

6. COMMUNICATING WITH PARENTS. The checklist is a convenient tool to communicate expectations to the student's parent(s).

Behavior Checklist Sheet
p. 23

Behavior Checklist Assignment

Directions. Select a goal student behavior. Break that behavior down into separate steps to create a checklist.

Here are some examples of larger behaviors that can be task-analyzed and turned into checklists: "Completes in-class writing assignments", "complies with teacher requests", "gets organized at the start of class/the day", "attends to instruction", "interacts appropriately with peers during group work".

Goal Student Behavior: _____

_____

Behavior Steps:

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

LAB WORK: Create a Behavior Checklist

- Select a goal student behavior. Break that behavior down into separate steps to create a checklist.

  Here are some examples of larger behaviors that can be task-analyzed and turned into checklists: “Completes in-class writing assignments”, “complies with teacher requests”, “gets organized at the start of class/the day”,“is focused on instruction”.

  GOAL STUDENT BEHAVIOR: _____

  _____

- Now create a checklist including all steps to this goal behavior.

Classroom Data Tool: Checklist

Free Online App: Self-Check Behavior Checklist Maker. This online tool allows teachers to define student behavior during classroom routines and transitions – a great way to clearly define behavioral expectations.

2

Classroom Data Tool: Behavior Frequency Count

- **What It Is:** In a behavioral frequency count, an observer (e.g., the teacher) watches a student's target behavior and keeps a cumulative tally of the number of times that the behavior is observed during a given period. (Form available online.)

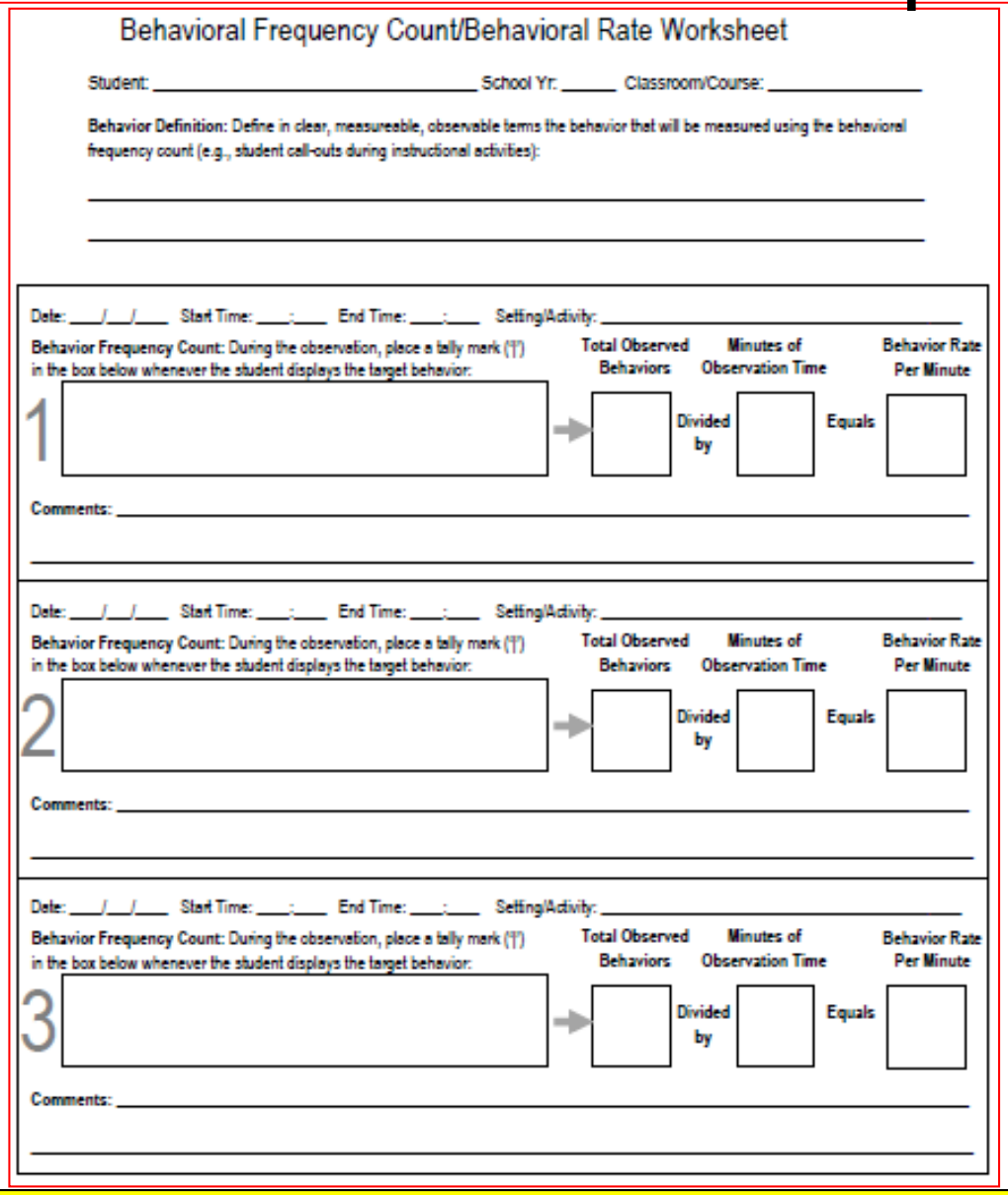
  Behaviors best measured using frequency counts have clearly observable beginning and end points—and are of short duration.

  Examples include:

  – call-outs
  – requests for teacher help during independent seatwork.
  – raising one's hand to contribute to large-group discussion.

Classroom Data Tool: Behavior Frequency Count

Behavior Frequency Count (Online)



Behavioral Frequency Count/Behavioral Rate Worksheet

Student: _____ School Yr: _____ Classroom/Course: _____

Behavior Definition: Define in clear, measureable, observable terms the behavior that will be measured using the behavioral frequency count (e.g., student call-outs during instructional activities):

_____

_____

Date: ___/___/___ Start Time: ___:___ End Time: ___:___ Setting/Activity: _____

Behavior Frequency Count: During the observation, place a tally mark ('|') in the box below whenever the student displays the target behavior:

		Total Observed Behaviors		Minutes of Observation Time		Behavior Rate Per Minute
1			Divided by		Equals	

Comments: _____

_____

Date: ___/___/___ Start Time: ___:___ End Time: ___:___ Setting/Activity: _____

Behavior Frequency Count: During the observation, place a tally mark ('|') in the box below whenever the student displays the target behavior:

		Total Observed Behaviors		Minutes of Observation Time		Behavior Rate Per Minute
2			Divided by		Equals	

Comments: _____

_____

Date: ___/___/___ Start Time: ___:___ End Time: ___:___ Setting/Activity: _____

Behavior Frequency Count: During the observation, place a tally mark ('|') in the box below whenever the student displays the target behavior:

		Total Observed Behaviors		Minutes of Observation Time		Behavior Rate Per Minute
3			Divided by		Equals	

Comments: _____

_____

Classroom Data Tool: Behavior Frequency Count

- **How to use:** The observer watches the student and makes a tally mark for each observed display of the target behavior. At the end of the observation, the observer divides total number of behaviors observed by minutes of observation time to calculate a standardized rate of **behavior per minute**.

Behavior Definition: Define in clear, measureable, observable terms the behavior that will be measured using the behavioral frequency count (e.g., student call-outs during instructional activities):

The student calls out comments without permission during large-group instruction.

Date: 10/20/2018 Start Time: 10:30 End Time: 10:50 Setting/Activity: Writing Instruction: Whole-class

Behavior Frequency Count: During the observation, place a tally mark ('|') in the box below whenever the student displays the target behavior:

		Total Observed Behaviors		Minutes of Observation Time		Behavior Rate Per Minute
1	/ / / / / /	6	Divided by	20m	Equals	0.3

Comments: Called out 1 correct answer to teacher Q; rest of call-outs were nonsense noises.

3

Classroom Data Tool: Behavior Frequency Count

Activity: Think Critically About BFC's

- Behavior Frequency Counts are useful when the student's behaviors have clear, observable start and end points and are of short duration.

  Because BFCs require direct observation, the quality of information they provide also depends on factors such as where the observer is sitting and whether the student knows that he/she is being observed.

  Look over the BFC form (handout 2). Discuss ideas for when and how to use BFCs that will increase the usefulness of their data.

3

Classroom Data Tool: Behavior Log/Scatterplot

- **What It Is:** Behavior logs are narrative 'incident reports' that the teacher records about problem student behaviors. (See handout 2.) The teacher makes a log entry each time that a behavior is observed. An advantage of behavior logs is that they can provide information about the context within which a behavior occurs.(Disciplinary office referrals are a specialized example of a behavior log.)

  Logged behavior incidents can then be plotted on 'scatterplots' to look for connections between student schedule and problem behaviors.

4

Behavior Log: Sample Form p. 39

Student Name: _____Observer:_____

Time: ___;___ a.m./p.m. Date: ___/___/___ Location: _____

Brief narrative of incident (including persons involved, scheduled activity, triggering event(s), outcome(s));

_____

_____

_____

How long did this incident last? _____ mins

How severe was the behavior in the incident? 1 Not Severe 2 Somewhat Severe 3 Very Severe

4

Classroom Data Tool: Behavior Log/Scatterplot

- What It Can Measure:

Behavior logs are often used for teachers to record 'low-incident, high-amplitude' behaviors—that is, behaviors that occur only occasionally but that can disrupt instruction and/or pose a risk to safety (e.g., threats, verbal outburst, tantrum, destruction of property).

4

Behavior Log: Sample Form

Student Name: Angela H. Observer: Meredith Z.

Time: 11:40 (a.m./p.m.) Date: 10/20/18 Location: Social Studies: Indep Rdng

Brief narrative of incident (including persons involved, scheduled activity, triggering event(s), outcome(s));

The class was assigned a short passage to read and given 10 mins. Angela sat at her desk but did not begin the reading. When approached by the teacher and told to start reading, she refused and suddenly left the room.

How long did this incident last? 2 mins

How severe was the behavior in the incident?

1	(2)	3
Not Severe	Somewhat Severe	Very Severe

4

Behavioral Scatterplot Handout 2

Behavioral Scatterplot

Directions: Write the student's general daily schedule in the column labeled 'Activity/Class Schedule'. For each day during which target problems behaviors were monitored in the student's *behavioral log*, mark an 'X' in the appropriate date column at the time when the problem behavior occurred. When all behaviors have been plotted at the correct date and time of their occurrence, look for possible explanatory patterns between the activities scheduled and the behaviors observed --e.g., due to physical setting variables, academic task demands, presence or absence of adult supervision, etc.

Time	Activity / Class Schedule	*Date/Day* _____	*Date/Day* _____	*Date/Day* _____	*Date/Day* _____	*Date/Day* _____
7:30-7:45						
7:45-8:00						
8:00-8:15						
8:15-8:30						
8:30-8:45						
8:45-9:00						
9:00-9:15						
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3:45-4:00						
4:00-4:15						
4:15-4:30						

Behavioral Scatterplot

Step 1: Plot Teacher Behavior Log Data onto Scatterplot. (In example, "X" represents student refusal to comply with teacher request.)

Step 2: Superimpose the student's school schedule over the scatterplot. Look for significant patterns between location/activity and PRESENCE or ABSENCE of student behaviors.

Math

Reading

Science

Behavioral Scatterplot

Directions: Write the student's general daily schedule in the column labeled 'Activity/Class Schedule'. For each day during which target problems behaviors were monitored in the student's *behavioral log*, mark an 'X' in the appropriate date column at the time when the problem behavior occurred. When all behaviors have been plotted at the correct date and time of their occurrence, look for possible explanatory patterns between the activities scheduled and the behaviors observed --e.g., due to physical setting variables, academic task demands, presence or absence of adult supervision, etc.

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7:30-7:45						
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8:00-8:15						
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11:30-11:45		X				
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12:15-12:30					X	X
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4:15-4:30						

4

Behavioral Scatterplot

Step 1: Plot Teacher Behavior Log Data onto Scatterplot. (In example, 'X' represents student refusal to comply with teacher request.)

Behavioral Scatterplot

Directions: Write the student's general daily schedule in the column labeled 'Activity/Class Schedule'. For each day during which target problems behaviors were monitored in the student's *behavioral log*, mark an 'X' in the appropriate date column at the time when the problem behavior occurred. When all behaviors have been plotted at the correct date and time of their occurrence, look for possible explanatory patterns between the activities scheduled and the behaviors observed --e.g., due to physical setting variables, academic task demands, presence or absence of adult supervision, etc.

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8:15-8:30		X				
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10:45-11:00						
11:00-11:15				X		
11:15-11:30						
11:30-11:45		X				
11:45-12:00						
12:00-12:15						
12:15-12:30					X	X
12:30-12:45						
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4:15-4:30						

4

Behavioral Scatterplot

Step 2: Superimpose the student's school schedule over the scatterplot. Look for significant patterns between location/activity and PRESENCE or ABSENCE of student behaviors.

Math

Reading

Science

Behavioral Scatterplot

Directions: Write the student's general daily schedule in the column labeled 'Activity/Class Schedule'. For each day during which target problems behaviors were monitored in the student's *behavioral log*, mark an 'X' in the appropriate date column at the time when the problem behavior occurred. When all behaviors have been plotted at the correct date and time of their occurrence, look for possible explanatory patterns between the activities scheduled and the behaviors observed --e.g., due to physical setting variables, academic task demands, presence or absence of adult supervision, etc.

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8:45-9:00						
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10:15-10:30						
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10:45-11:00						
11:00-11:15						
11:15-11:30				X		
11:30-11:45		X				
11:45-12:00						
12:00-12:15						
12:15-12:30					X	X
12:30-12:45						
12:45-1:00						
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3:30-3:45						
3:45-4:00						
4:00-4:15						
4:15-4:30						

4

Classroom Data Tool: Behavior Log/Scatterplot

Activity: Design Your Own Behavior Log

- Review the sample behavior log form.
- What are situations when you might use a log to track student behaviors?

Student Name: _____Observer:_____

Time: ___;___ a.m./p.m. Date: ___/___/___ Location: _____

Brief narrative of incident (including persons involved, scheduled activity, triggering event(s), outcome(s));

_____

_____

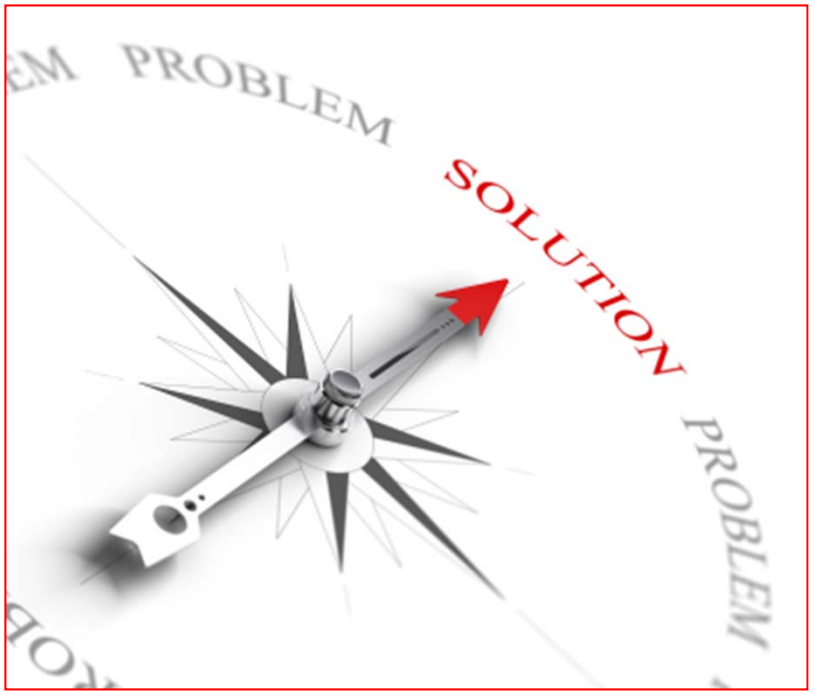
_____

How long did this incident last? _____ mins

How severe was the behavior in the incident? 1 Not Severe 2 Somewhat Severe 3 Very Severe

4

How to Monitor Student Progress on Tier 1/Classroom Interventions



How to Monitor Student Progress on Tier 1/Classroom Interventions pp. 12-20

7 Steps to Monitor Progress on Tier 1/Classroom Interventions

RTI/MTSS By Jim Wright, Contributing Consultant to Frontline Education on 1/15/2019

When I visit schools as an RTI/MTSS consultant and talk with teachers about Tier 1/classroom academic interventions, I often hear frustration over the difficulty of collecting and interpreting data to monitor student progress. Yet, the critical importance of data is that it 'tells the story' of the academic or behavioral intervention, revealing the answers to such central questions as:

- what specific skills or behaviors does the student find challenging?
- what is the student's baseline or starting point?
- what outcome goal would define success for this student?
- has the student reached the goal?

If the information required to answer any of these questions is missing, the data story becomes garbled and teachers can find themselves unsure about the purpose and/or outcome of the intervention.

While following a guide does not eliminate all difficulties in tracking Tier 1/classroom interventions, these 7 steps will help the educators you work with ask the right questions, collect useful data and arrive at meaningful answers at Tier 1.

STEP 1: What skill or behavior is being measured?

Creating a Classroom Progress-Monitoring Plan: 7 Steps

1. What is the skill or behavior that you are measuring?

2. What data-collection method will best measure your target skill or behavior?

3. How long will your intervention last?

4. What is the student's baseline performance?

5. What is the student's outcome goal?

6. How often will you collect data?

7. How does the student's actual performance compare with the outcome goal?

How to Monitor Classroom Interventions

STEP 1: What is the skill or behavior that you are measuring? The initial step in setting up your plan to monitor a student is to choose a specific skill or behavior to measure.

This 'problem-identification' statement should define the skill or behavior in clear, specific terms.

Problem-Identification Statements: Examples
HOMEWORK. Russell does not turn in homework.
WRITING. Andrea's writing includes many incomplete sentences.
MATH FACTS. Rick is not fluent in multiplication math facts.
BEHAVIOR. Angela is inattentive in large-group instruction.

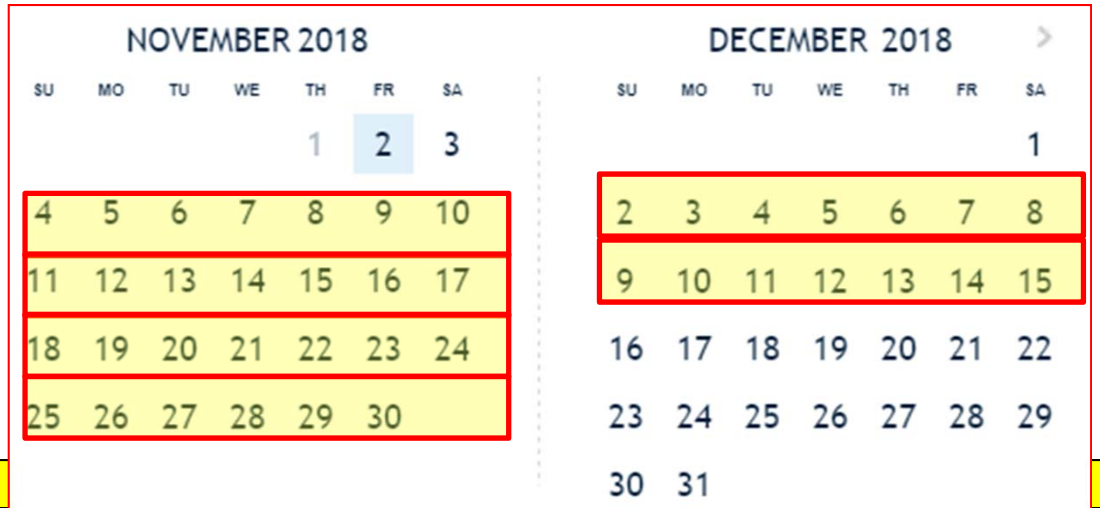
How to Monitor Classroom Interventions

STEP 2: What data-collection method will best measure your target skill or behavior? Your next objective is to select a valid, reliable, and manageable way to collect data on the skill or behavior that you have targeted for intervention. (For a list of assessment tools, see handout; pp. 4-6)

Data Collection Methods: Examples	
Problem ID Statement	***Sample Data Tool***
HOMEWORK. Russell does not turn in homework.	Homework log
WRITING. Andrea's writing includes many incomplete sentences.	Writing Sample: Compute percentage of complete sentences.
MATH FACTS. Rick is not fluent in multiplication math facts.	Curriculum-based measurement: 2-minute math computation worksheets in 0-12 multiplication
BEHAVIOR. Angela is inattentive in large-group instruction.	Daily Behavior Report Card

How to Monitor Classroom Interventions

STEP 3: How long will your intervention last? When planning your classroom intervention, you should determine an end-date when you can review your progress-monitoring data and decide whether the intervention is successful. A good practice is to run your intervention for at least 6-8 instructional weeks before evaluating its effectiveness.



NOVEMBER 2018

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DECEMBER 2018

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30	31					

How to Monitor Classroom Interventions

STEP 4: What is the student's baseline performance?

Before launching your intervention, you will first use your selected data-collection tool to record baseline data reflecting the student's current performance in the skill or behavior that you are measuring.

Baseline data represents a starting point that permits you to calculate precisely any progress the student makes during the intervention.

Because student data can vary, you should strive to collect at least 3 baseline data points.

Baseline Data: Examples		
Problem ID Statement	*Sample Data Tool*	*Baseline Data*
HOMEWORK. Russell does not turn in homework.	Homework log	Russell turned in homework on 20 percent of days when homework was assigned. **[Data source: percentage homework completion calculated from 1 week of homework log entries.]**
WRITING. Andrea's writing includes many incomplete sentences.	Writing Sample: Compute percentage of complete sentences.	On Andrea's writing samples, an average of 40 percent of sentences are found to be incomplete. **[Data source: median value of 3 writing samples collected on different days]**
MATH FACTS. Rick is not fluent in multiplication math facts.	Curriculum-based measurement: 2-minute math computation worksheets	Rick calculates an average of 29 correct digits in 2 minutes on a 0-12 multiplication math-fact worksheet. **[Data source: median value of 3 CBM worksheets collected on different days.]**
BEHAVIOR. Angela is inattentive in large-group instruction.	Daily Behavior Report Card	On a DBRC item *"The student requires no more than 1 redirect for inattention during the class period"*, the teacher rates this item 'YES' during 1 of 5 days (20 percent). **[Data source: percentage calculated from 5 days of DBRC data collection.]**

How to Monitor Classroom Interventions

STEP 5: What is the student's outcome goal? You will next set an outcome goal that describes how the student is expected to perform on the target skill or behavior if the intervention is successful (e.g., after 6-8 weeks).

S.M.A.R.T. (SMART)

- ***S***PECIFIC
- ***M***EASURABLE
- ***A***PPROPRIATE, ACHIEVEABLE, ATTAINABLE
- ***R***EALISTIC, RESULTS-FOCUSED
- ***T***IME-BOUND

Outcome Goal: Examples		
Problem ID Statement	*Sample Data Tool*	*Outcome Goal*
HOMEWORK. Russell does not turn in homework.	Homework log	Russell will turn in at least 80 percent of assigned homework. [Data source: percentage homework completion calculated from final week of homework log entries.]
WRITING. Andrea's writing includes many incomplete sentences.	Writing Sample: Compute percentage of complete sentences.	On Andrea's writing samples, at least 90 percent of attempted sentences will be correct and complete. [Data source: median value of final 3 writing samples]
MATH FACTS. Rick is not fluent in multiplication math facts.	Curriculum-based measurement: 2-minute math computation worksheets	Rick will calculate an average of 49 correct digits in 2 minutes on a 0-12 multiplication math-fact worksheet. [Data source: average of final 2 CBM worksheets.]
BEHAVIOR. Angela is inattentive in large-group instruction.	Daily Behavior Report Card	On a DBRC item *"The student requires no more than 1 redirect for inattention during the class period"*, the teacher will rate this item 'YES' during at least 4 of 5 days (80 percent). [Data source: percentage calculated from final 5 days of DBRC data collection.]

How to Monitor Classroom Interventions

- **STEP 5: What is the student's outcome goal? (Cont.)** You can use several sources to calculate an outcome goal:
- *CBMs.* If you are using academic CBMs with benchmark norms, those grade-level norms can help you to set a goal for the student.
- *Classroom Norms.* If you are measuring a skill for which you lack benchmark norms, you may instead be able to compile classroom norms (i.e.., sampling your entire class or a subgroup of your class) and use those group norms to set an outcome goal.
- *Teacher-Defined Performance Goal (Criterion Mastery).* Sometimes, you must write an outcome goal—but don't have access to benchmark or classroom norms. In this case, you can always use your own judgment to define a meaningful outcome goal: e.g., the student will follow a 7-step process to solve a math word problem.

How to Monitor Classroom Interventions

STEP 5: What is the student's outcome goal? (Cont.)

TIP: For a student with a large academic deficit, you very likely will not be able to close that skill-gap entirely within one 6-8-week intervention cycle.

In this instance, you should instead set an ambitious '**intermediate goal**' that will demonstrate that your student is clearly closing the academic gap with peers.

Students with substantial academic delays may require several repeated intervention-cycles with intermediate goals before they can close the skill-gap sufficiently to bring them up to grade-level peers ('**final goal**').

How to Monitor Classroom Interventions

STEP 6: How often will you collect data? The more frequently you collect data, the more quickly you will be able to judge whether an intervention is effective (Filderman & Toste, 2018). This is because more data points make trends of improvement easier to spot and increase your confidence in the pattern that the data is showing you.

Ideally, you should collect data at least weekly for the duration of the intervention period. If that is not feasible, you will want monitor student progress no less than twice per month.

How to Monitor Classroom Interventions

STEP 7: How does the student's actual performance compare with the outcome goal? Once you have created your progress-monitoring plan for the student, you will put that plan into action. At the end of the pre-determined intervention period (e.g., in 6 weeks), you will review the student's cumulative progress-monitoring data, compare it to the outcome goal, and judge the effectiveness of the intervention.

How to Monitor Classroom Interventions

STEP 7: How does the student's actual performance compare with the outcome goal? (Cont.) Here are your outcome decision rules:

- *Outcome goal met.* If your student meets the outcome goal, the intervention is a success. You can stop the intervention or continue for a time if the student still benefits from it.
- *Progress but outcome goal not met.* If your student fails to meet the outcome goal, but you see clear signs that the student is making progress, you might decide that the intervention shows promise. Here, your next step would be to alter the existing intervention to intensify its effect: e.g., smaller group size; more frequent meetings).
- *Little or no progress observed.* If your student does not make progress, you should replace the intervention plan with a new strategy.

Creating a Classroom Progress-Monitoring Plan: 7 Steps

1. What is the skill or behavior that you are measuring?

2. What data-collection method will best measure your target skill or behavior?

3. How long will your intervention last?

4. What is the student's baseline performance?

5. What is the student's outcome goal?

6. How often will you collect data?

7. How does the student's actual performance compare with the outcome goal?

Activity: How to Monitor Classroom Interventions

- Review the 7 steps shared here to monitor any classroom intervention.
- Which step(s) do you believe might be the MOST **challenging** to implement in your classroom or school?

Assorted Academic Data Tools. What are additional teacher-friendly ways to monitor student academic performance?

Classroom Data Tools
pp. 4-6

Classroom Data Tools: What Are They and What Can They Measure?

When a teacher wants to monitor a student's progress on a classroom academic intervention, the instructor will (1) decide what data 'channel' to use to collect that data, and then (2) select a data tool designed to capture the desired information. Here are those steps:

Step 1: Select a Data 'Channel'. While there are many ways to collect data to monitor student academic performance, virtually all information is gathered through one of four general 'data channels': direct observation, interviews, work products, or self-monitoring.

- *Direct observation.* The evaluator watches the student engaged in the academic task and records significant behaviors observed during that observation.
- *Interviews.* The evaluator talks with the student and/or adults familiar with the student to collect useful information about the student's academic performance.
- *Work products.* The evaluator reviews completed student work (e.g., in-class or homework assignments, quizzes and tests, etc.) to draw conclusions about that student's academic performance.
- *Self-monitoring.* The student collects information about his or her own academic performance and shares that data with the evaluator.

The four channels described here give teachers access to vital information on student performance. However, it is likely that the data the teacher collects across multiple situations will be highly variable and subjective—unless that instructor makes an effort to collect information in a structured, consistent format over time.

For example, a teacher might observe a student weekly during independent work to monitor whether the learner is consistently applying all steps of an academic strategy. If the teacher simply jots down random notes during these observations, the information collected will probably vary considerably across time, depending on what the teacher decides to include in his notes on any given day. If instead, however, the teacher uses a checklist that includes the essential steps in the academic strategy, that instructor's observations are far more likely to record accurately and consistently what steps in the strategy the student actually uses.

Checklists, rubrics, and other tools can transform information collected via observation, interviews, work products, or self-monitoring into objective formative data that can be charted over time to track the outcomes of classroom interventions.

Step 2: Select a Data Tool. Teachers have a variety of tools that they can access to collect behavioral or academic information and monitor classroom interventions. This 'look-up' chart provides a review of the most common data sources and what they can measure:

Data Tool	What It Is	What It Can Measure
Archival Data	Existing data routinely collected by schools that provides useful ongoing information about the student's academic or behavioral performance.	• Attendance • Office disciplinary referrals • Other aspects of behavior or academic performance captured in the school database

Classroom Data Collection: The Basics…

Here are important guidelines: Tier 1/classroom data collection methods should:

- **measure skill(s) targeted by the intervention.** The educator wants to know whether the student is improving a specific skill or behavior. The data-collection method is selected to track growth in that skill or behavior.
- **be sensitive to short-term gains.** Progress-monitoring should reveal in weeks—not months– whether the intervention is effective.
- **yield a specific number value.** The teacher selects progress-monitoring tool(s) that can be converted to numeric data—and charted.

Classroom Data Tool: Cumulative Mastery Record

- **What It Is:** A cumulative record of the student's acquisition/mastery of a defined collection of academic items such as multiplication math facts.

  This record is updated whenever the student masters another academic item.

1

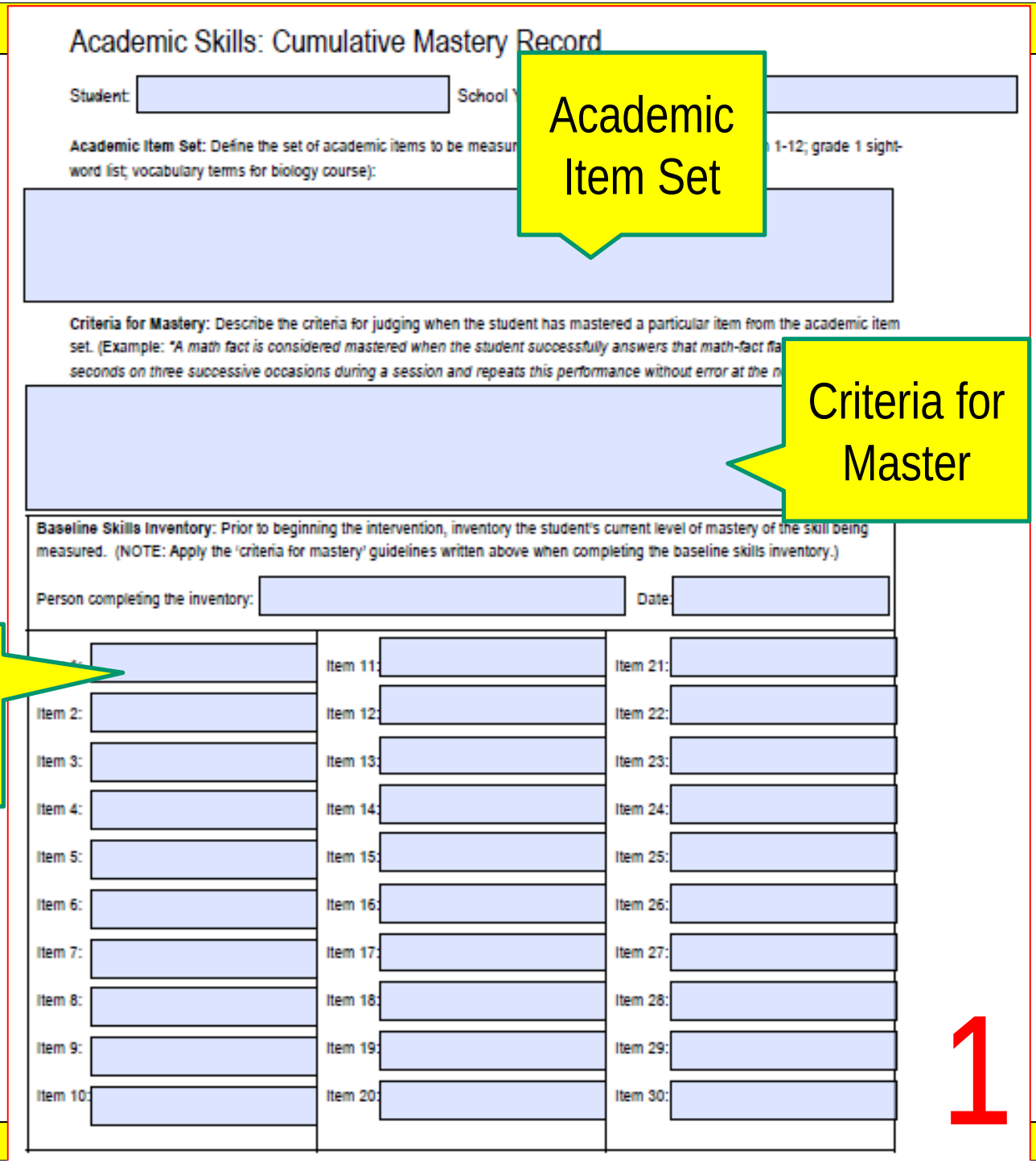
Classroom Data Tool: Cumulative Mastery Record

- What It Can Measure:

  - Any discrete collection of academic items to be mastered, such as:
    - vocabulary terms/definitions
    - math facts
    - spelling words
    - letter or number names
    - sight words.

1

Cumulative Mastery Record Form p.1



Academic Skills: Cumulative Mastery Record

Student:

Academic Item Set: Define the set of academic items to be measur 1-12; grade 1 sight-word list; vocabulary terms for biology course):

Criteria for Mastery: Describe the criteria for judging when the student has mastered a particular item from the academic item set. (Example: *"A math fact is considered mastered when the student successfully answers that math-fact fa seconds on three successive occasions during a session and repeats this performance without error at the n*

Baseline Skills Inventory: Prior to beginning the intervention, inventory the student's current level of mastery of the skill being measured. (NOTE: Apply the 'criteria for mastery' guidelines written above when completing the baseline skills inventory.)

Person completing the inventory: Date:

Item 1:	Item 11:	Item 21:
Item 2:	Item 12:	Item 22:
Item 3:	Item 13:	Item 23:
Item 4:	Item 14:	Item 24:
Item 5:	Item 15:	Item 25:
Item 6:	Item 16:	Item 26:
Item 7:	Item 17:	Item 27:
Item 8:	Item 18:	Item 28:
Item 9:	Item 19:	Item 29:
Item 10:	Item 20:	Item 30:

Academic Item Set

Criteria for Master

Baseline Skills Inventory

1

Cumulative Mastery Record

Cumulative Mastery Record Form p.2

Academic Intervention: Cumulative Mastery Record

Student: School Yr: Classroom/Course:

Cumulative Mastery Record: During the intervention, record each mastered item below with date of mastery. NOTE: Be sure to use the 'criteria for mastery' defined on the first page of this form when judging whether the student has mastered a particular item.

Item 1:		Date:	Item 21:		Date:
Item 2:		Date:	Item 22:		Date:
Item 3:		Date:	Item 23:		Date:
Item 4:		Date:	Item 24:		Date:
Item 5:		Date:	Item 25:		Date:
Item 6:		Date:	Item 26:		Date:
Item 7:		Date:	Item 27:		Date:
Item 8:		Date:	Item 28:		Date:
Item 9:		Date:	Item 29:		Date:
Item 10:		Date:	Item 30:		Date:
Item 11:		Date:	Item 31:		Date:
Item 12:		Date:	Item 32:		Date:
Item 13:		Date:	Item 33:		Date:
Item 14:		Date:	Item 34:		Date:
Item 15:		Date:	Item 35:		Date:
Item 16:		Date:	Item 36:		Date:
Item 17:		Date:	Item 37:		Date:
Item 18:		Date:	Item 38:		Date:
Item 19:		Date:	Item 39:		Date:
Item 20:		Date:	Item 40:		Date:

1

Cumulative Mastery Record: Steps. Student progress on acquisition-stage goals can be measured using flashcards. Here are the steps:

- *STEP 1: Prepare flashcards.* Create a flashcard deck with all items in the collection that the student is working to master (e.g., letter-naming).

1

Cumulative Mastery Record: Steps.

STEP 2: Define mastery. Develop criteria to define mastery performance for any item:

EXAMPLE: Mastery Criteria: *When shown a letter, the student names it correctly within 3 seconds. The student is able to repeat this performance 3 times without error.*

1

Cumulative Mastery Record Form

Academic Skills: Cumulative Mastery Record

Student: Janey | School Yr: 2017 | Classroom/Course: Mrs. Winters, KDG

Academic Item Set: Define the set of academic items to be measured (e.g., basic multiplication facts from 1-12; grade 1 sight-word list; vocabulary terms for biology course):

Letter-Naming: Mixed Case

Criteria for Mastery: Describe the criteria for judging when the student has mastered a particular item from the academic item set. (Example: *"A math fact is considered mastered when the student successfully answers that math-fact flashcard within 3 seconds on three successive occasions during a session and repeats this performance without error at the next session."*):

When shown a letter, the student names it correctly within 3 seconds. The student is able to repeat this performance 3 times without error.

1

Cumulative Mastery Record: Steps.

STEP 3: Collect baseline data. Conduct a baseline assessment to find out which items the student already knows. Show the student each flashcard and ask the student to respond. Use your mastery criteria to sort the cards into "known" and "unknown" piles.

In our example, if a student hesitates for longer than 3 seconds to identify a letter name, that flashcard is placed on the "unknown" pile.

Record the flashcard items that the student knows and the date of the baseline assessment.

1

Cumulative Mastery Record Form

Baseline Skills Inventory: Prior to beginning the intervention, inventory the student's current level of mastery of the skill being measured. (NOTE: Apply the 'criteria for mastery' guidelines written above when completing the baseline skills inventory.)

Person completing the inventory: Mrs. Winters

Date: Sept 23, 2017

Item 1: a	Item 11: m	Item 21: D
Item 2: L	Item 12: r	Item 22: R
Item 3: Z	Item 13: B	Item 23: o

1

Cumulative Mastery Record: Steps.

STEP 4: Monitor progress. During the acquisition intervention, periodically (e.g., weekly) review the flashcards with the student. Whenever the student masters an additional item (according to your mastery criteria), log the mastered item and date.

1

Cumulative Mastery Record Form

Academic Intervention: Cumulative Mastery Record

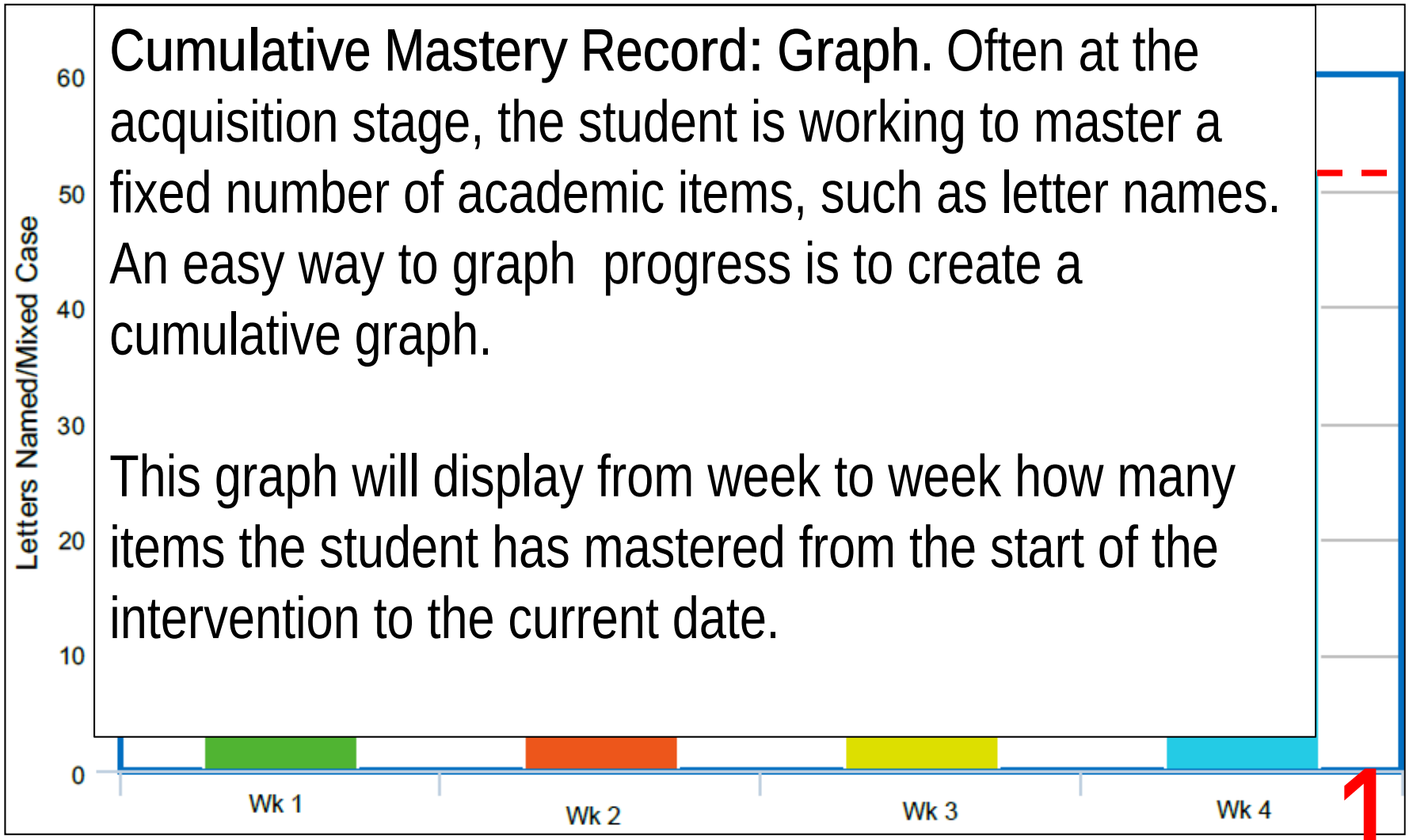
Student: Janey | School Yr: 2017 | Classroom/Course: Mrs. Winters, KDG

Cumulative Mastery Record: During the intervention, record each mastered item below with date of mastery. NOTE: Be sure to use the 'criteria for mastery' defined on the first page of this form when judging whether the student has mastered a particular item.

Item 1:	Q	Date: 9/28/17	Item 21:		Date:
Item 2: :	C	Date: 9/28/17	Item 22:		Date:
Item 3: :	J	Date: 9/28/17	Item 23:		Date:
Item 4: :	d	Date: 10/2/17	Item 24:		Date:

1

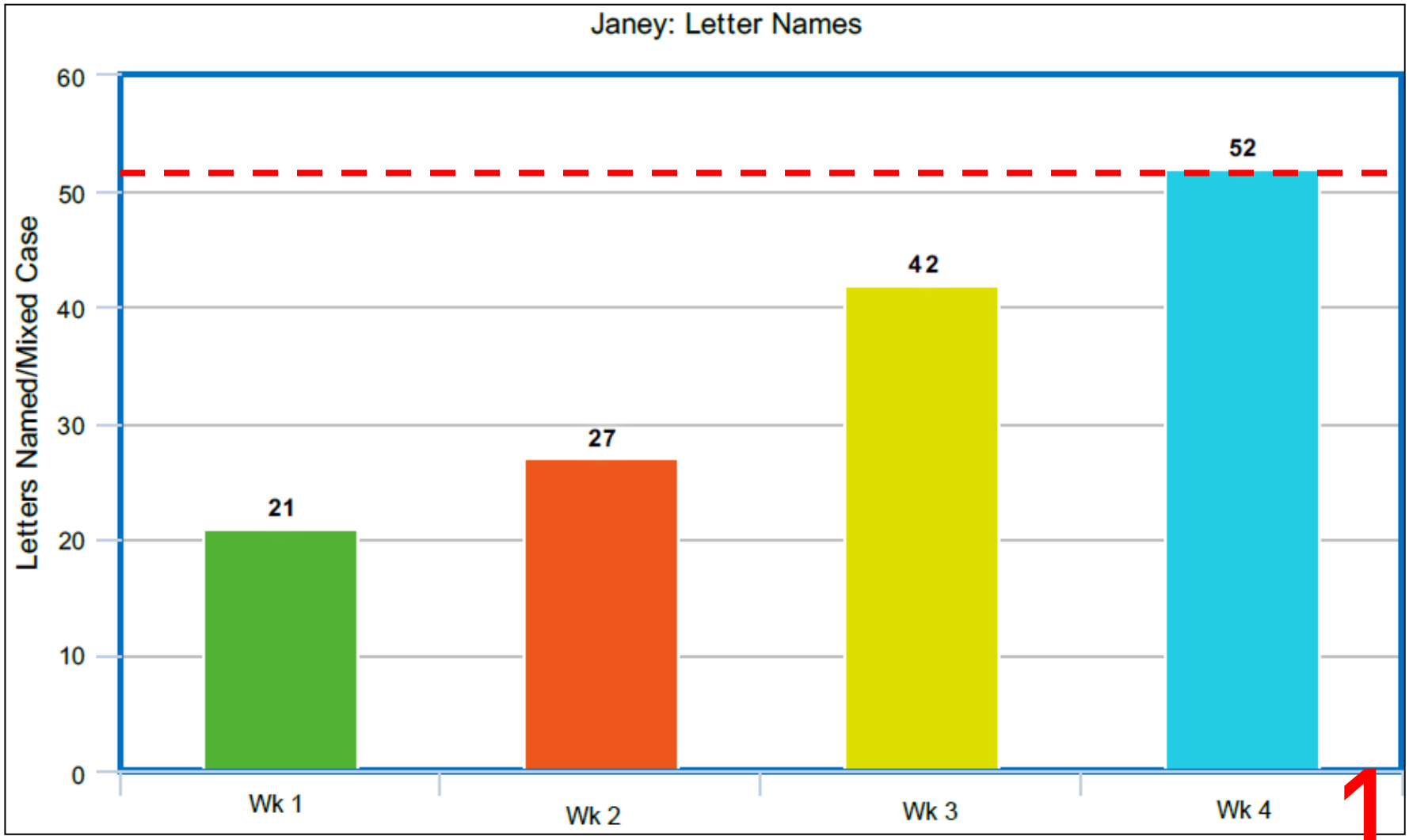
Cumulative Mastery Record Graph: Example



Cumulative Mastery Record: Graph. Often at the acquisition stage, the student is working to master a fixed number of academic items, such as letter names. An easy way to graph progress is to create a cumulative graph.

This graph will display from week to week how many items the student has mastered from the start of the intervention to the current date.

Cumulative Mastery Record Graph: Example



Classroom Data Tool: Grades

- **What It Is:** Represents in letter or number form the teacher's formal, summary evaluation of the student's academic performance on an assignment, quiz, test, or longer span of evaluation.

2

Classroom Data Tool: Grades

- What It Can Measure:

  - ❑ Academic Performance

2

Classroom Data Tool: Grades

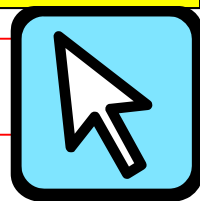
- **Grades as Progress-Monitoring Tools**

Grades can be optimized in 2 ways to monitor interventions:

1. *Revise grading to yield a 'pure' measure of academic performance.* One trick for making grades a data source capable of reliably tracking the impact of an intervention is to partition the global grade into academic and non-academic components. The teacher then has the option to average the two components to calculate a composite grade. The advantage of this approach is that the instructor can use just the academic grade as a 'pure' measure of the student's actual performance.

2

Classroom Data Tool: Grades



- **Grades as Progress-Monitoring Tools**

Grades can be optimized in 2 ways to monitor interventions:

2. *Increase frequency of grading opportunities*. The power of grades as a data source increases significantly when opportunities for grading occur more often (Weinstein & Wu, 2009). Collect relevant gradable student work at least weekly to provide grading information sufficient to evaluate ongoing growth in performance. This frequency results in the teacher's ability to have a real-time sense of academic performance across the entire class (allowing reteaching if needed), and to track short-term improvements in course performance for specific students.

2

Classroom Data Tool: Grades

Grading Example: Comprehension: Measuring retention of assigned readings.

Readiness Assessment Tests (RATs). RATs are brief teacher-made assignments that students complete *after* reading but *before* that reading is reviewed in class (Weinstein & Wu, 2009). The teacher identifies the most relevant information from the assigned reading and constructs a few questions (e.g., 5) to test that knowledge.

The instructor selects the RAT-question format: short-answer; essay; multiple-choice, or any combination.

2

Readiness Assessment Tests (RATs): Sample Questions.

Multiple Choice.

A solar eclipse occurs when:

- A. the sun cools and dims.
- B. the moon passes between the earth and sun.
- C. the earth spins on its axis.
- D. the earth blocks moonlight.

Short Answer.

A solar eclipse occurs when the _____ passes

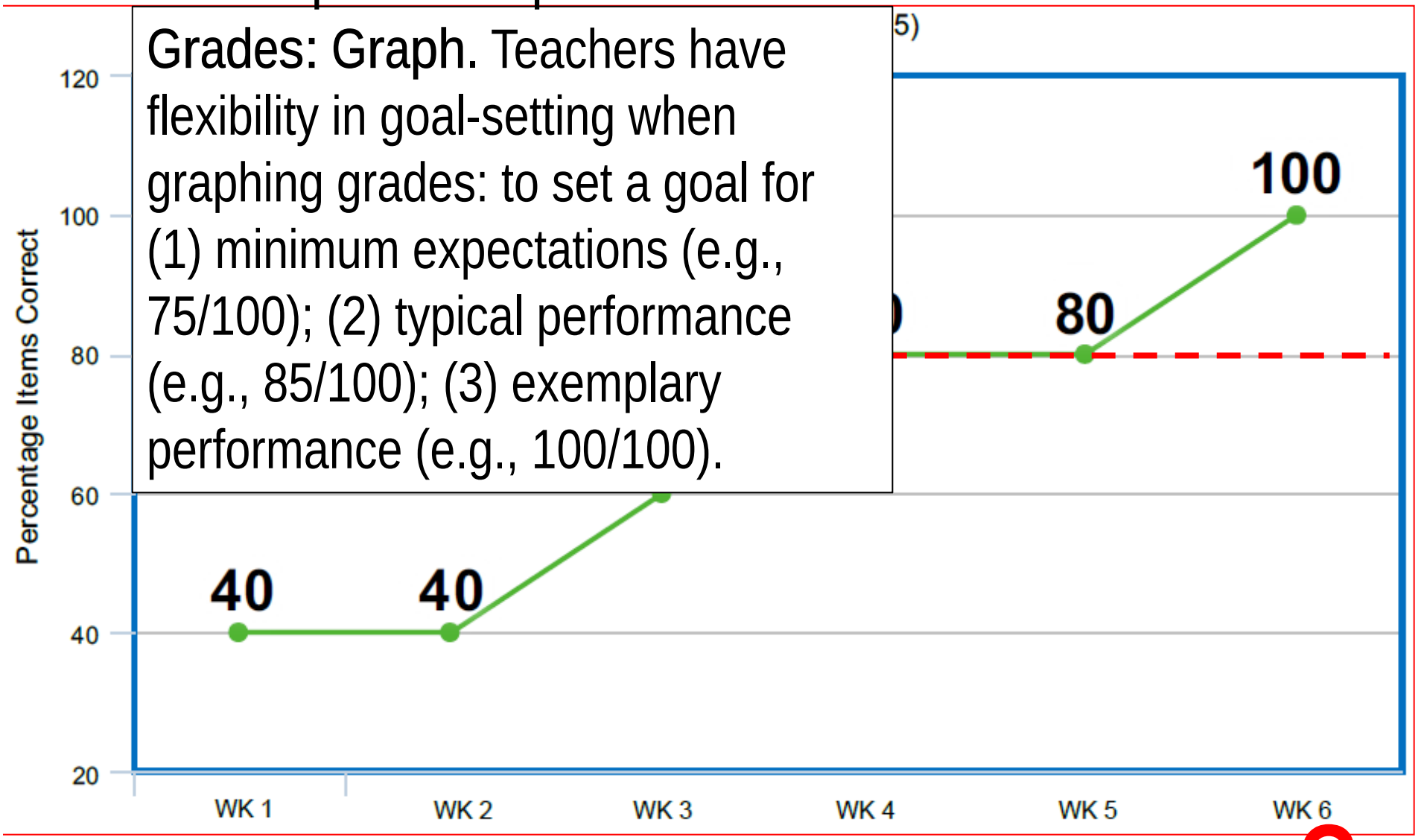
between the _____ and sun.

Essay

Write a brief essay explaining the cause of a solar eclipse. 2

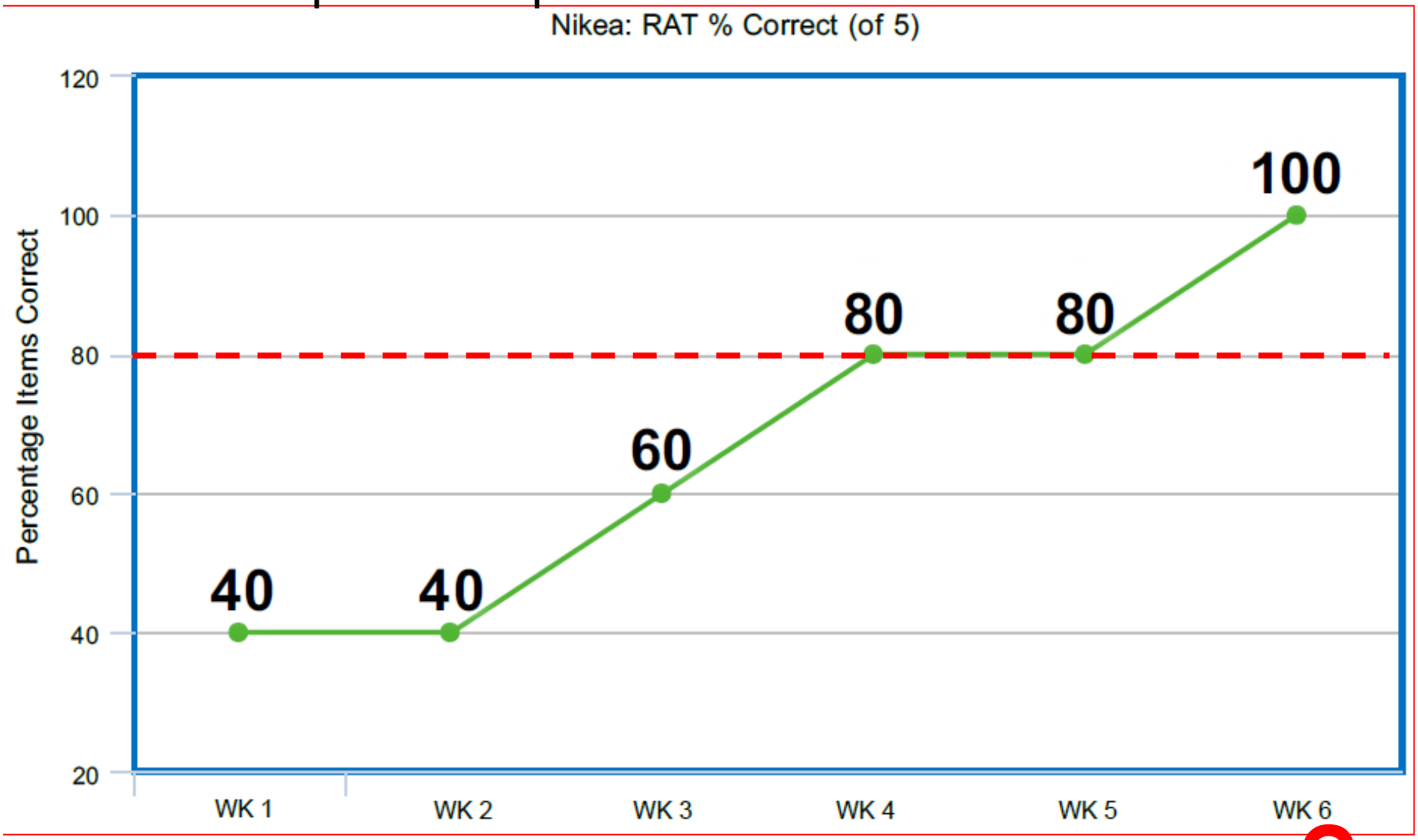
Grades Graph: Example

Grades: Graph. Teachers have flexibility in goal-setting when graphing grades: to set a goal for (1) minimum expectations (e.g., 75/100); (2) typical performance (e.g., 85/100); (3) exemplary performance (e.g., 100/100).



2

Grades Graph: Example



2

Classroom Data Tool: Rubric

- **What It Is:** An instrument designed to measure a student on complex tasks.

  In a rubric, the teacher defines the categories that make up the important dimensions of a task, develops written exemplars representing mastery for each dimension, and creates a rating scale to be used in evaluating a particular student's work for each dimension.

3

Intervention Central

Core Standards & Student Motivation/Self-Regulation

C… …g &
L… …ds: K-5

a. Prepares for discussion

S… …ation Center for Best Practices & Council of Chief State School Officers. (2010). Common core state standards for English language arts and literacy in history/social studies, science, and technical subjects. Washington, DC: Authors. Retrieved from http://www.corestandards.org/ p. 24

Grade 5 students:

1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.
   a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
   b. Follow agreed-upon rules for discussions and carry out assigned roles.
   c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
   d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

3

Core Standards & Student Motivation/Self-Regulation

CCSS: ELA: Speaking & L… …ds: K-5

Sc… …ation Center
fo… …f State School
Or…
fo…
his… …ical
su… …Retrieved
fr… …p. 24

b. Fulfills assigned discussion role(s) and follows rules

Grade 5 students:

1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.
   a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
   b. Follow agreed-upon rules for discussions and carry out assigned roles.
   c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
   d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

3

Core Standards & Student Motivation/Self-Regulation

c. Engages in Q&A turn-taking and contributes ideas to discussion

C… …aking &
L… …ds: K-5

*Sc… …er
fo… …
O… …e standard…
for English language arts and literacy in history/social studies, science, and technical subjects. Washington, DC: Authors. Retrieved from http://www.corestandards.org/ p. 24*

Grade 5 students:

1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.
   a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
   b. Follow agreed-upon rules for discussions and carry out assigned roles.
   c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
   d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

3

Core Standards & Student Motivation/Self-Regulation

d. Reviews discussion content to summarize learning, draw conclusions

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Sc… …ter fo… …ool O… …e sta… fo… …y in history/social studies, science, and technical subjects. Washington, DC: Authors. Retrieved from http://www.corestandards.org/ p. 24

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3

Rubric: Example

Analytic Rubric: 'Student Discussion Group' Example

Task: The student will take part in weekly in-class collaborative peer discussions of assigned readings, contributing ideas and responding appropriately to the ideas of others (from CCSSELA.5.SL.1).

Dimensions	**Needs Work (1-3 pts)**	**Competent (4-6 pts)**	**Exemplary (7-9 pts)**
Preparation	Has not completed the assigned readings and/or does not bring notes of the readings to the discussion..	Has completed the assigned reading(s) and brings notes of the readings to the discussion.	Has completed the assigned reading(s), brings notes of the readings to the discussion, and gives evidence of having done additional reading/research in the discussion topic.
Compliance With Discussion Rules/Roles	Fails to follow the rules set up for the discussion activity and/or does not adequately carry out the responsibilities of an assigned discussion role.	Follows the rules set up for the discussion activity. When assigned a role in discussion, adequately carries out the responsibilities of that role.	Follows the rules set up for the discussion activity. When needed, reminds others to adhere to discussion rules. When assigned a formal role (e.g., discussion leader), fully carries out the responsibilities of that role.
Contribution to Discussion	Does not actively sustain his or her part in the discussion. May pose questions of limited relevance to the discussion topic. May not respond appropriately to the comments of others.	Poses questions relevant to the discussion topic and responds appropriately to the comments of others. Remarks display a willingness to acknowledge the contributions of others in the discussion group,	Participates fully in the discussion. Poses questions relevant to the discussion topic and responds appropriately to the comments of others. Remarks display a good grasp of the topic and a willingness to acknowledge the contributions of others in the discussion group,

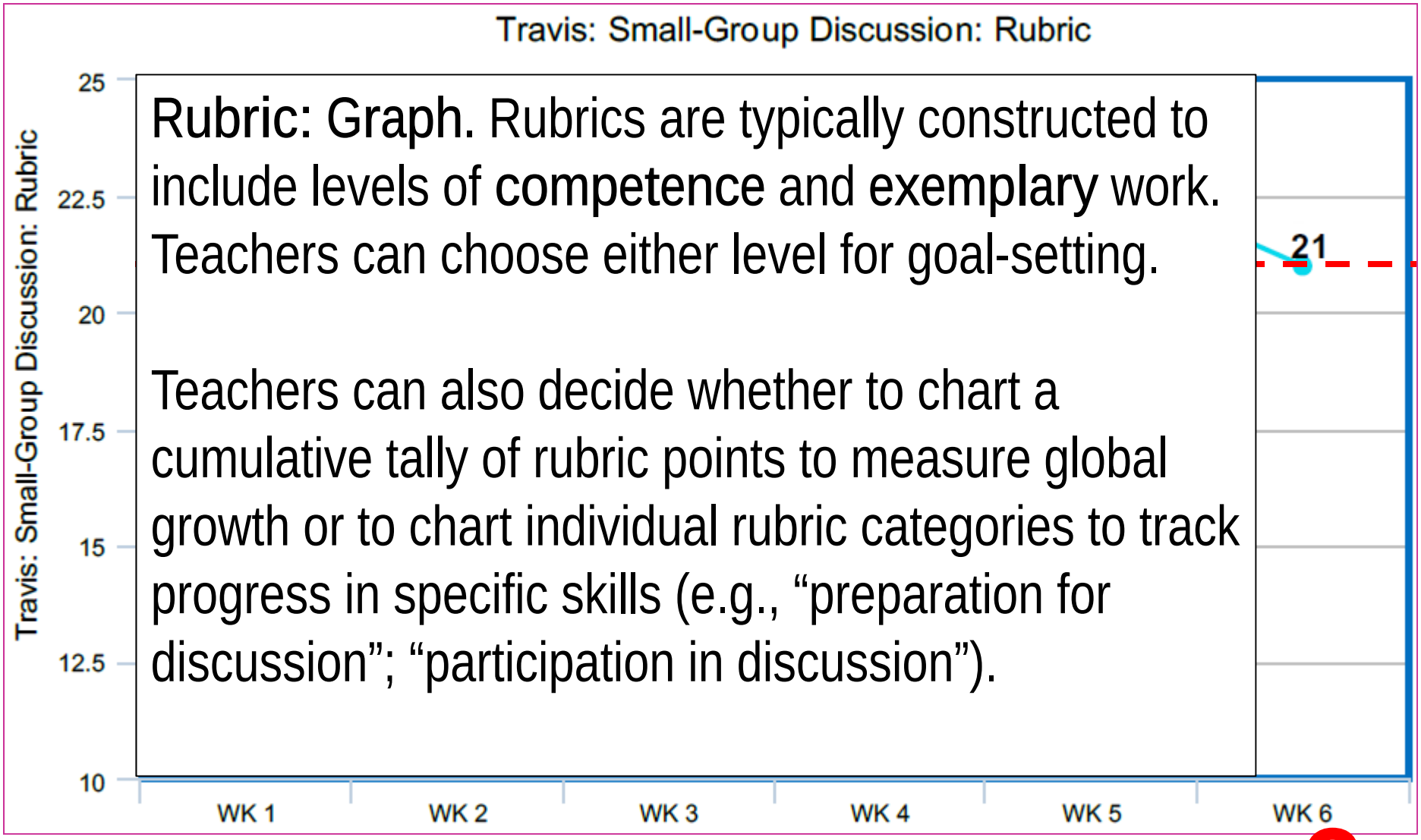
Classroom Data Tool: Rubric

- What It Can Measure:

  - ❑ Any complex, multi-dimensional task, such as:
    - ✓ participation in a discussion;
    - ✓ writing a research paper;
    - ✓ preparing and presenting a PowerPoint;
    - ✓ completing and documenting a science lab project.

3

Rubric: Example

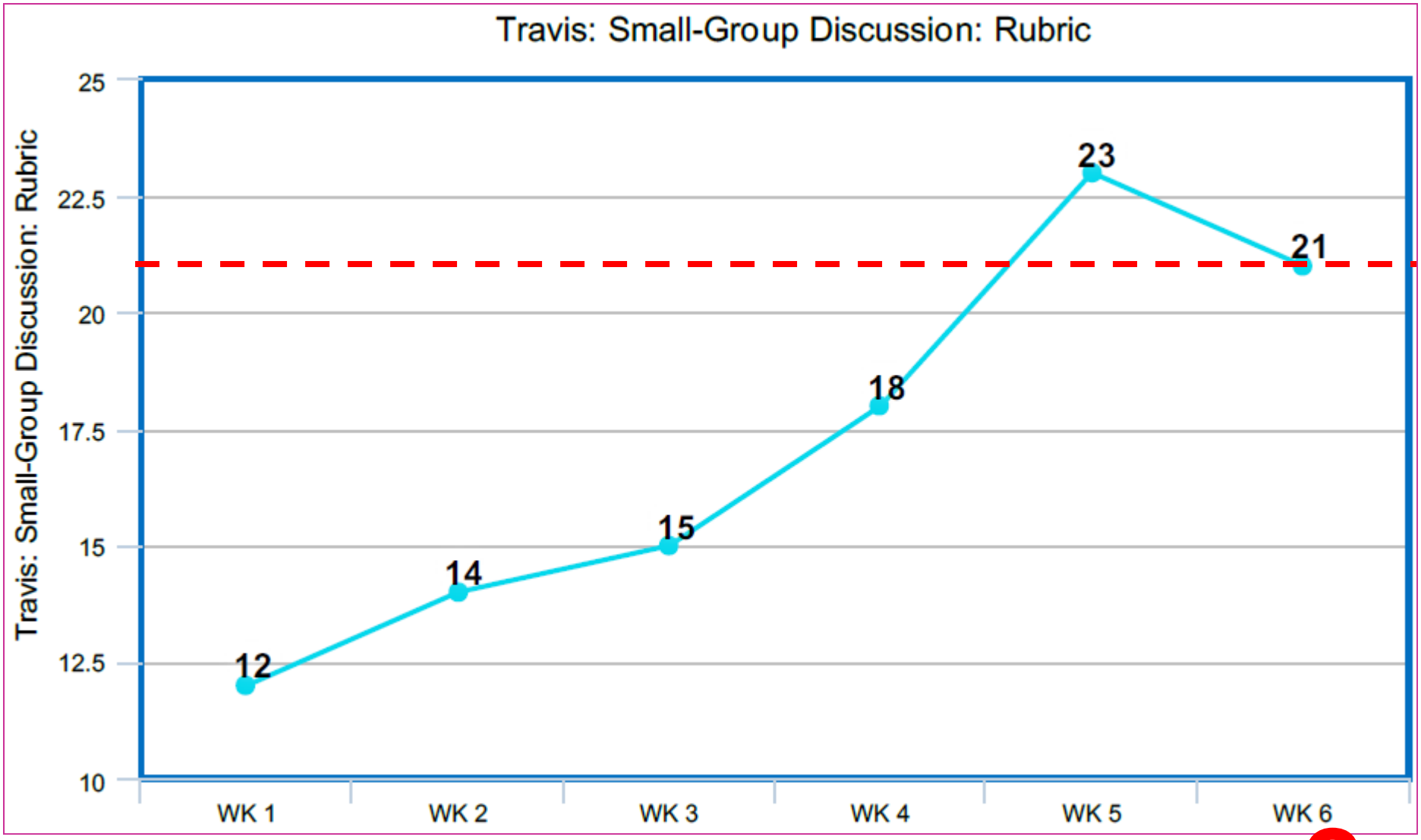


Rubric: Graph. Rubrics are typically constructed to include levels of **competence** and **exemplary** work. Teachers can choose either level for goal-setting.

Teachers can also decide whether to chart a cumulative tally of rubric points to measure global growth or to chart individual rubric categories to track progress in specific skills (e.g., “preparation for discussion”; “participation in discussion”).

3

Rubric: Example



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Classroom Data Tool: Work Products

- **What It Is:** Student work that reflects performance on a series of similar in-class or homework assignments (e.g., successive writing assignments or ongoing math homework).

  A work product is selected because it can reflect growth in the intervention target skill(s). The element(s) of the work product being tracked can be objectively measures and converted to numeric data (e.g., percentage of problems completed).

4

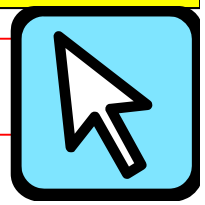
Classroom Data Tool: Work Products

- What It Can Measure:

  - ❑ Work completion
  - ❑ Work accuracy
  - ❑ Written evidence of problem-solving steps
  - ❑ Quality of student work (e.g., on writing assignments)

4

Classroom Data Tool: Work Products



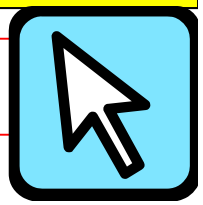
- **Converting Work Products from Artifact to Data: Tutorial:**

Teachers can find many inventive ways to convert work products into objective data. Here are some ideas to get started:

1. *Work Accuracy: Percentage.* Tracks the accuracy of student work containing a finite number of items, such as math number problems or end-of-chapter questions. Compute by dividing the number of correct answers by the total number of assigned items.

4

Classroom Data Tool: Work Products



- Converting Work Products from Artifact to Data: Tutorial:

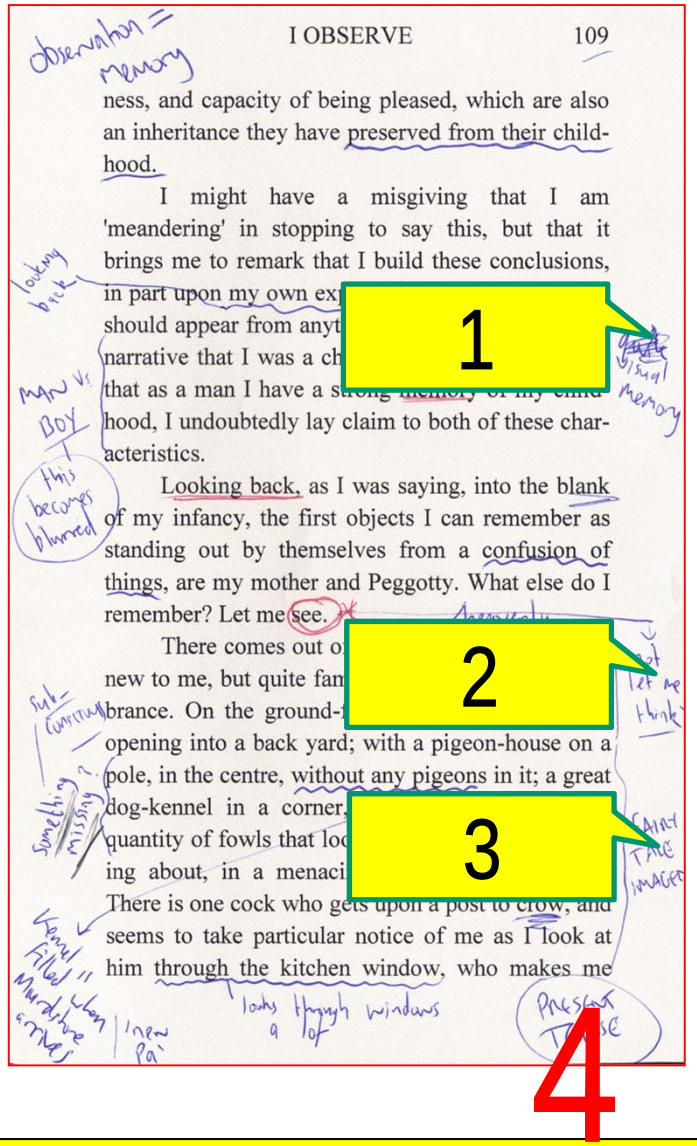
2. *Work Attempted: Percentage.* Measures effort on student work containing a finite number of items. Calculate by dividing the number of items attempted (whether correct or not) by the total number of items.
3. *Work Time: Time Log.* Indicates the amount of time required to complete the assignment. Compute by (1) having the student or teacher record the student's start and end time in working on the assignment and then
(2) calculating the number of elapsed minutes.

4

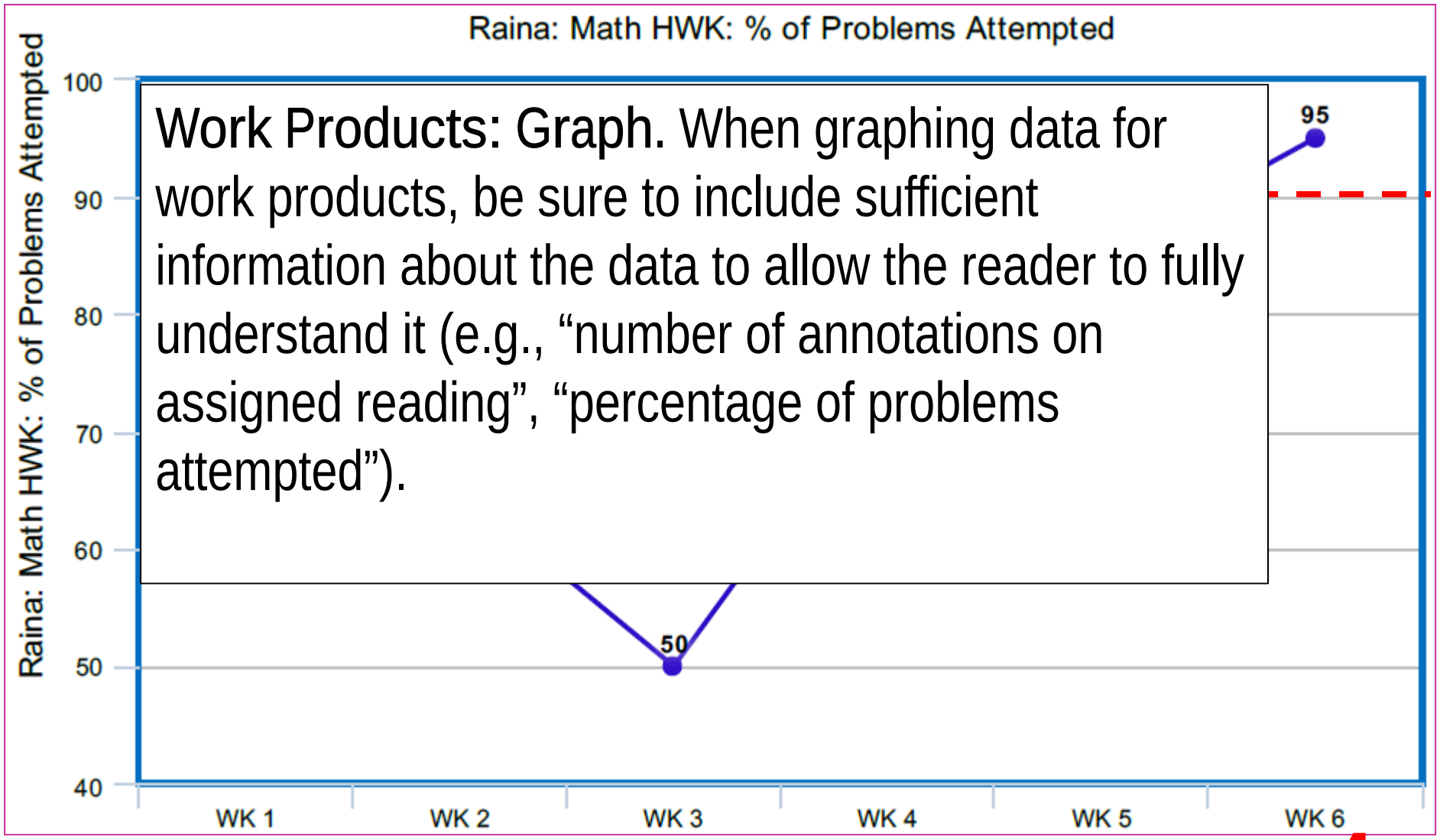
Classroom Data Tool: Work Products

Work products. Example.

- Text annotation. Students can increase their retention of information when they interact actively with their reading by jotting comments in the margin of the text (Sarkisian et al., 2003).



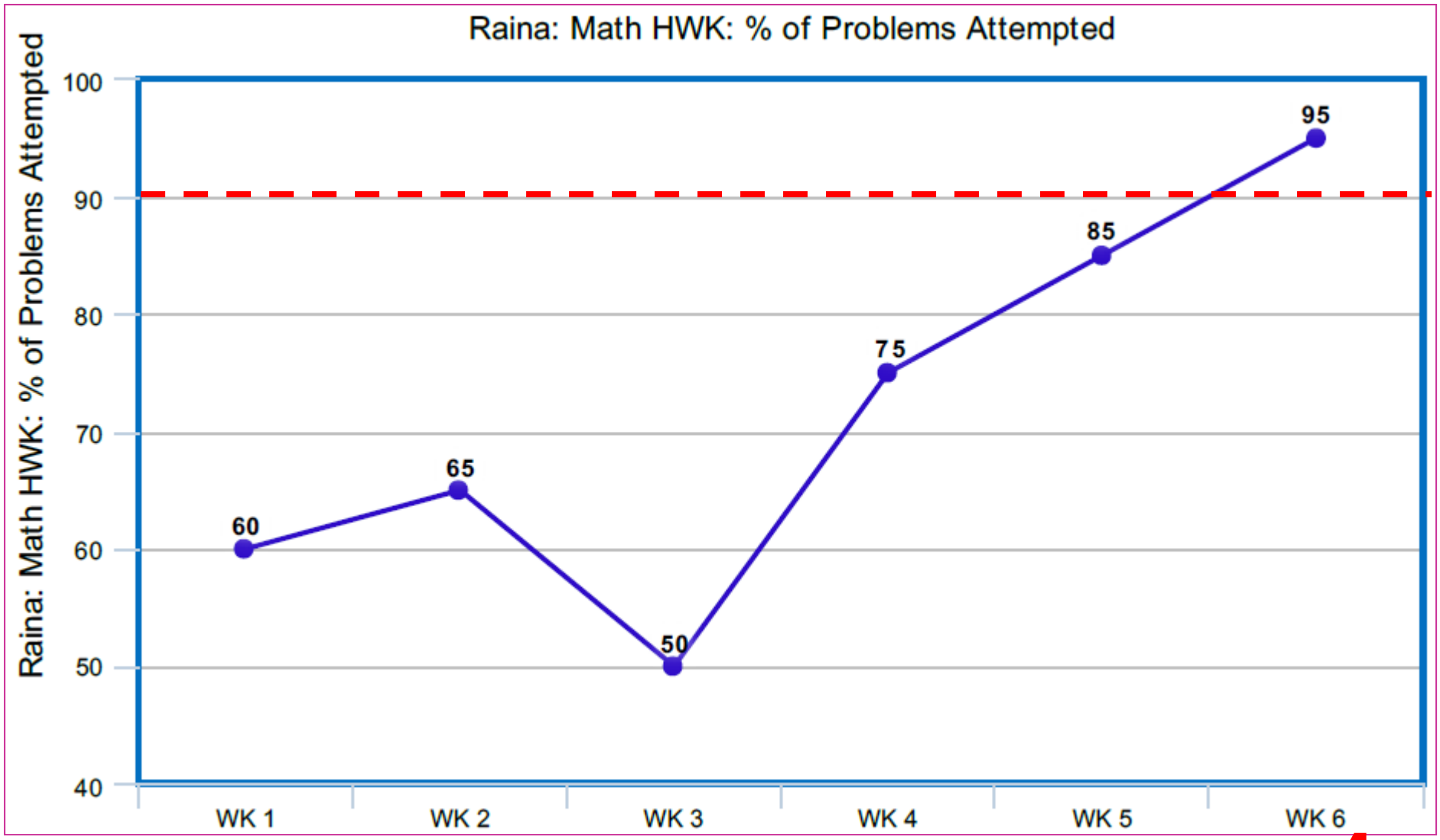
Work Products: Example



Work Products: Graph. When graphing data for work products, be sure to include sufficient information about the data to allow the reader to fully understand it (e.g., "number of annotations on assigned reading", "percentage of problems attempted").

4

Work Products: Example

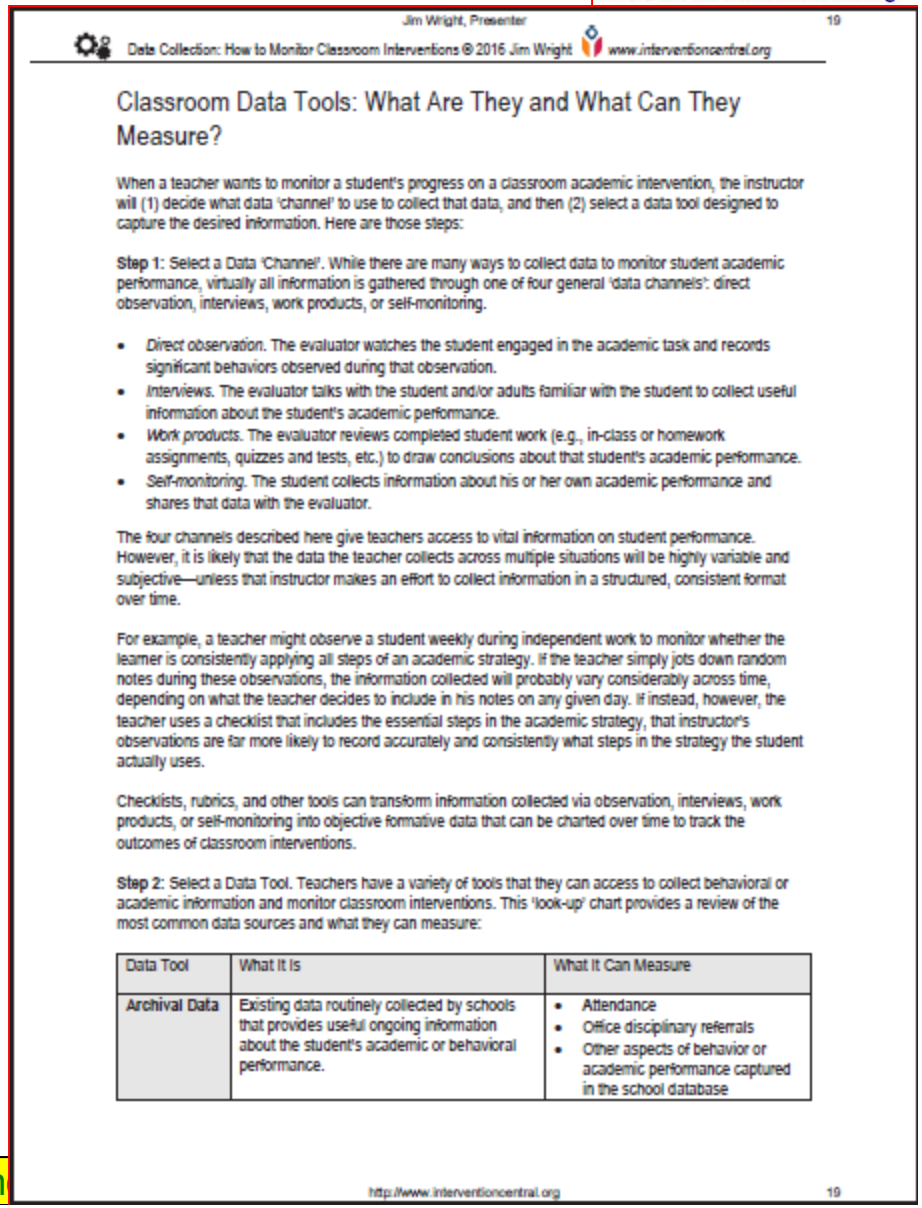


4

How to Track Classroom Reading Interventions

Review methods of classroom data collection (pp. 4-6).

Select 1-2 methods you would like to use (or use more often) in your classroom.



Classroom Data Tools: What Are They and What Can They Measure?

When a teacher wants to monitor a student's progress on a classroom academic intervention, the instructor will (1) decide what data 'channel' to use to collect that data, and then (2) select a data tool designed to capture the desired information. Here are those steps:

Step 1: Select a Data 'Channel'. While there are many ways to collect data to monitor student academic performance, virtually all information is gathered through one of four general 'data channels': direct observation, interviews, work products, or self-monitoring.

- *Direct observation*. The evaluator watches the student engaged in the academic task and records significant behaviors observed during that observation.
- *Interviews*. The evaluator talks with the student and/or adults familiar with the student to collect useful information about the student's academic performance.
- *Work products*. The evaluator reviews completed student work (e.g., in-class or homework assignments, quizzes and tests, etc.) to draw conclusions about that student's academic performance.
- *Self-monitoring*. The student collects information about his or her own academic performance and shares that data with the evaluator.

The four channels described here give teachers access to vital information on student performance. However, it is likely that the data the teacher collects across multiple situations will be highly variable and subjective—unless that instructor makes an effort to collect information in a structured, consistent format over time.

For example, a teacher might observe a student weekly during independent work to monitor whether the learner is consistently applying all steps of an academic strategy. If the teacher simply jots down random notes during these observations, the information collected will probably vary considerably across time, depending on what the teacher decides to include in his notes on any given day. If instead, however, the teacher uses a checklist that includes the essential steps in the academic strategy, that instructor's observations are far more likely to record accurately and consistently what steps in the strategy the student actually uses.

Checklists, rubrics, and other tools can transform information collected via observation, interviews, work products, or self-monitoring into objective formative data that can be charted over time to track the outcomes of classroom interventions.

Step 2: Select a Data Tool. Teachers have a variety of tools that they can access to collect behavioral or academic information and monitor classroom interventions. This 'look-up' chart provides a review of the most common data sources and what they can measure:

Data Tool	What It Is	What It Can Measure
Archival Data	Existing data routinely collected by schools that provides useful ongoing information about the student's academic or behavioral performance.	• Attendance • Office disciplinary referrals • Other aspects of behavior or academic performance captured in the school database

Ask the right questions.

Decide what questions that data collection should attempt to answer.

Q: How do I measure if the student…is becoming more accurate in an academic skill?

Classroom Assessment Methods

1. Archival Data	7. Interviews
2. Behavior Report Cards	8. Logs
3. Checklists	9. Observation
4. Cumulative Mastery Records	10. Rubrics
5. Curriculum-Based Measures/ Assessment	11. Self-Monitoring
6. Grades	12. Work Products

Q: How do I measure if the student…is becoming more accurate in an academic skill?

- *Cumulative Mastery Record:* This approach is suitable when the student is mastering a fixed set of items (e.g., biology vocabulary; multiplication math facts 0-12).
- *Observation/Log:* The teacher observes and records instances of successful student performance.
- *Work product:* The teacher examines student work and records the number/percentage of items correct.

Handout: pp. 7-8

Progress-Monitoring Questions: How Do I Measure…?

Before a teacher can select a method to monitor a student intervention, that instructor must first decide what assessment question(s) to answer. This 'look-up' chart lists the most common classroom assessment questions and specific assessments that can answer those questions.

Assessment Questions: How do I measure if the student…	Suggested Methods of Progress-Monitoring
• is becoming more accurate in an academic skill (goal: accuracy only)?	• Cumulative Mastery Record: This approach is suitable when the student is mastering a fixed set of items (e.g., biology vocabulary; multiplication math facts 0-12). • Observation/Log: The teacher observes and records instances of successful student performance. • Work product: The teacher examines student work and records the number/percentage of items correct.
• is developing fluency in an academic skill (goal: accuracy plus speed)?	• Curriculum-based measures: CBMs are a good choice for rote basic skills such as reading fluency, or math fact fluency. • Other timed measures: Teachers can create their own timed proficiency assessments–that assess work efficiency by measuring accurate responding within pre-set time limits (e.g., running record).
• is increasing comprehension of independent reading?	• Grades: Assignments or quizzes are structured to assess student comprehension of assigned readings and collected with sufficient frequency to capture evidence of short-term improvements. • Work product: Short-answer questions. The teacher prepares questions suitable for assessing student comprehension of the reading (e.g., mix of factual and inferential questions). Question sets can be assigned as homework or included in quizzes. • Work product: Written retelling. The student is assigned to summarize important points of assigned readings ('written retellings'); the teacher tabulates the number/percentage of 'key ideas' or concepts included in the retelling.
• is mastering a multi-step cognitive strategy or behavior routine?	• Checklist: The teacher or student uses a checklist to verify steps of the strategy successfully completed. • Work product: The student is directed to show work on assignment, e.g., perhaps assisted by visual organizers or other aids highlighting strategy steps. The teacher reviews completed work for evidence of strategy use. • Observation/Interview: An adult observes the student during the activity to record (perhaps with the help of a checklist or behavior report card) those steps successfully carried out. The observer may also ask the student to describe the steps being followed.
• is turning in homework or in-class assignments with greater frequency?	• Log: The teacher keeps a record of homework turned in.

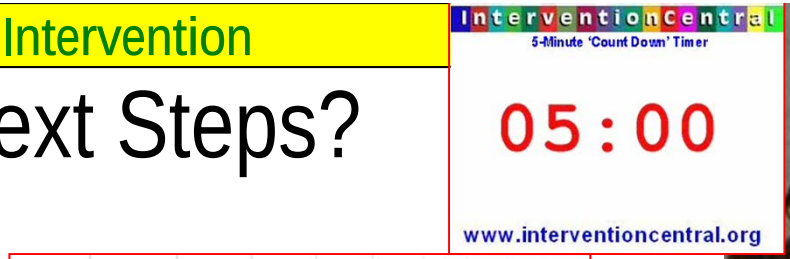
Monitoring student progress: How do I measure if the student…

- is becoming more accurate in an academic skill (goal: accuracy only)?
- is developing fluency in an academic skill (goal: accuracy plus speed)?
- is increasing comprehension of independent reading?
- is mastering a multi-step cognitive strategy or behavior routine?
- is turning in homework or inclass assignments with greater frequency?
- produces work of higher quality?
- is increasing on-task behavior and academic engagement?
- is better able to organize and implement steps necessary to complete an in-class or homework assignment?
- transfers an existing skill or strategy to new settings or situations (goal: generalization)?
- improves compliance with behavioral expectations?
- improves overall academic standing in the course because of academic interventions?

Your Data Questions Drive Choice of Assessment...

- Look over the sample data questions on pp. 7-8.
- Is this a helpful tool? If so, how might you use it?

Activity: What Are Your Next Steps?



Identify 2-3 'next steps' to use key ideas and resources from this data-collection training back in your classroom or **school.**