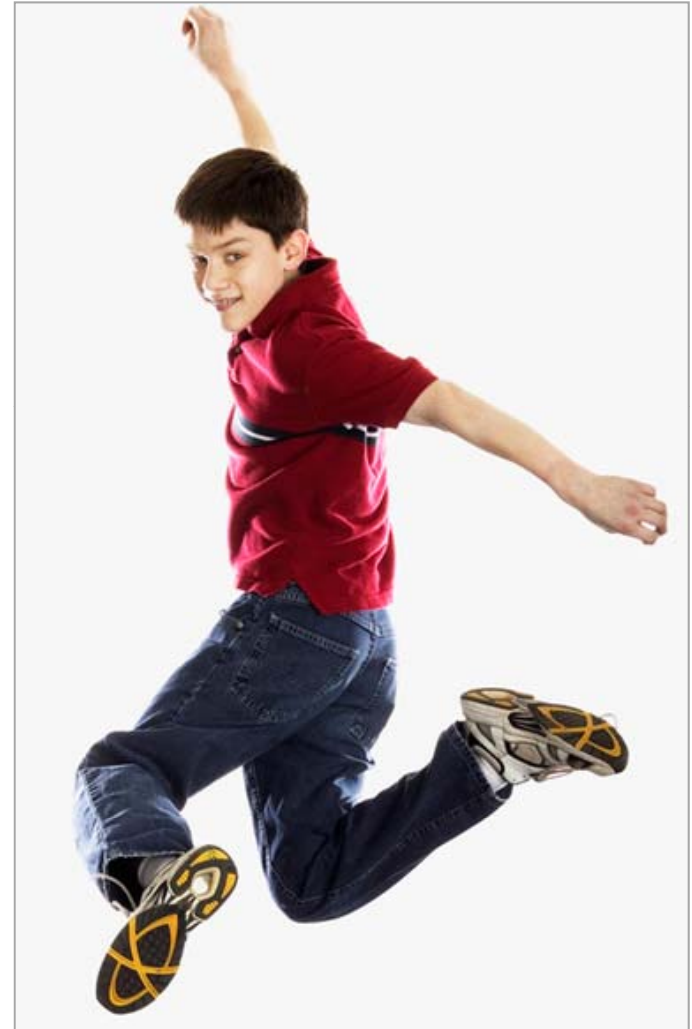


# RTI: Academic & Behavioral Interventions

*Jim Wright*

*[www.interventioncentral.org](http://www.interventioncentral.org)*



# Response to Intervention

Intervention Central  
www.interventioncentral.org

**INTERVENTION CENTRAL** Your source for RTI resources

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## Response To Intervention – RTI Resources

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### Products

RTI Success in Secondary Schools: A Toolkit for Middle and High Schools

### Latest Updates

July 22nd, 2013  
**How To: Teach Students to Change Behaviors Through Self-Monitoring**  
Student self-monitoring is an effective tool for behavior change that requires the student to take an active intervention role. Learn the 7steps to quickly set up a self-monitoring intervention.  
[Read more...](#)

Intervention Central provides teachers, schools and districts with free resources to help struggling learners and implement Response to Intervention and attain the Common Core State Standards. Spread the word about ICI [31 July 2013] Use Direct Instruction to Reach Struggling Learners. Teachers can make challenging academic material accessible by building assistance directly into instruction. This checklist is designed for general-education teachers and summarizes essential elements of a direct-instruction approach.

### Free Classroom Intervention Kit

	Intervention Planner for Academics	Manual	Sample Reading-Fluency Interventions
	Intervention Planner for Behavior	Manual	Sample Relationship-Building Strategies

### Featured Tools

- Academic Intervention Planner for Struggling Students
- Behavior Intervention Planner
- Behavior Rating Scales Report Card Maker
- ChartDog Graph Maker
- Dolch Wordlist Fluency Generator
- Early Math Fluency Generator
- Learning Disability Accommodations Finder
- Letter Name Fluency Generator
- Math Work - Math Worksheet Generator
- Reading Fluency Passages Generator
- Student Academic Success Strategies - Checklist Maker
- Student Rewards - Jackpot



INTERVENTION  
CENTRAL

*RTI Toolkit: A Practical Guide for Schools*

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## Implementing Response to Intervention: An Introduction for CAST Center Consultants

Jim Wright, Presenter

14-15 August 2013  
Hawaii Department of Education  
Honolulu, HI

Jim Wright  
364 Long Road  
Tully, NY 13159  
Email: [jim@jimwrightonline.com](mailto:jim@jimwrightonline.com)  
Workshop Materials: [http://www.interventioncentral.org/hi\\_doe](http://www.interventioncentral.org/hi_doe)

Access PPTs and other materials from this workshop at:

[http://www.interventioncentral.org/hi\\_doe](http://www.interventioncentral.org/hi_doe)

RTI: Academic & Behavioral Interventions

*Academic Intervention 'Big Ideas'.*

What are key concepts that should guide schools in implementing academic interventions?



### Academic Interventions: 7 'Big Ideas'

- *Academic problems should be clearly defined.* Before a teacher can select interventions to address a student academic problem, the instructor must be able to describe in clear and specific terms just what the student problem is. In fact, the most important step in the entire process of developing an intervention is to be able to describe correctly and specifically the problem that must be fixed (Bergan, 1995).

### Academic Interventions: 7 'Big Ideas'

- *Academic problems should be linked to their probable cause.* Once an academic problem has been defined, the teacher will want to develop a hypothesis ('educated guess') about what issue is causing that problem.

For example, a student may do poorly on a reading comprehension task because she lacks the necessary comprehension skills, is accurate but not yet fluent in those skills, had once learned those skills but failed to retain them, can perform the skills but has limited endurance, or possesses the skills but does not recognize situations when she should use them (Martens & Witt, 2004).

2

### Academic Interventions: 7 'Big Ideas'

- *Intervention strategies should be research-based.* When possible, the teacher should include in an intervention plan only those ideas supported by research. At present, there is no consensus on how to define 'research-based' interventions (Odom et al., 2005). However, a sensible rule of thumb to follow is that an intervention idea should be shown as effective in at least one study published in a reputable peer-reviewed research journal before it is used in school intervention plans.



### Academic Interventions: 7 'Big Ideas'

- *Intervention plans should help students to access instruction-- but not 'dumb down' instruction.* When putting together classroom intervention plans, instructors can choose from among a wide array of strategies to help the student to achieve academic success. But teachers should take care not cross the line and modify core instruction for struggling general-education students; that is, they should not hold underperforming students to a lesser academic standard than their classmates (Tindal & Fuchs, 1999).

### Academic Interventions: 7 'Big Ideas'

- *Interventions should be documented in writing.* When a teacher commits to develop an academic intervention to support a student, that instructor should always create a written plan to document the intervention prior to implementing it (Burns & Gibbons, 2008).

Writing out intervention plans help teachers to carry them out more consistently and be able to produce the plans when needed as proof that they are providing at-risk students with ongoing assistance.

### Academic Interventions: 7 'Big Ideas'

- *Interventions should be documented in writing (cont.)*. In a well-known article, Miller (1956) cited a number of psychological studies demonstrating that the average person is able to actively manage only about 7 discrete bits of information at one time--which explains why local phone numbers in the United States are 7 digits long. A teacher who is running a whole classroom while trying to informally manage even 1 or 2 individual student interventions in their heads must manage far more than 7 information-bits--and is thus likely to overlook important details about instruction or intervention simply because of cognitive overload—unless those intervention plans are written down!

# How To: Create a Written Record of Classroom Interventions Handout: pp. 21-23

## Classroom Intervention Planning Sheet: Math Computation Example

This worksheet is designed to help teachers to quickly create classroom plans for academic and behavioral interventions. (For a tutorial on how to fill out this sheet, review the accompanying directions.)

Case Information			
What to Write: Record the important case information, including student, person delivering the intervention, date of plan, start and end dates for the intervention plan, and the total number of instructional weeks that the intervention will run.			
Student:	John Samuelson-Gr 4	Interventionist(s):	Mrs. Kennedy, classroom teacher
Date Intervention is to Start:	M 8 Oct 2012	Date Intervention is to End:	F 16 Nov 2012
		Date Intervention Plan Was Written:	10 October 2012
		Total Number of Intervention Weeks:	6 weeks
Description of the Student Problem:		Slow math computation speed (computes multiplication facts at 12 correct digits in 2 minutes, when typical gr 4 peers compute at least 24 correct digits).	

Intervention
What to Write: Write a brief description of the intervention(s) to be used with this student. TIP: If you have a script for this intervention, you can just write its name here and attach the script to this sheet.
Math Computation Time Drill (Rhymer et al., 2002) Explicit time-drills are a method to boost students' rate of responding on arithmetic-fact worksheets: (1) The teacher hands out the worksheet. Students are instructed that they will have 3 minutes to work on problems on the sheet. (2) The teacher starts the stop watch and tells the students to start work. (3) At the end of the first minute in the 3-minute span, the teacher 'bells time', stops the stopwatch, and tells the students to underline the last number written and to put their pencils in the air. Then students are told to resume work and the teacher restarts the stopwatch. (4) This process is repeated at the end of minutes 2 and 3. (5) At the conclusion of the 3 minutes, the teacher collects the student worksheets.

Materials	Training
What to Write: Jot down materials (e.g., flashcards) or resources (e.g., Internet-connected computer) needed to carry out this intervention.	What to Write: Note what training—if any—is needed to prepare adult(s) and/or the student to carry out the intervention.
Use math worksheet generator on <a href="http://www.interventioncentral.org">www.interventioncentral.org</a> to create all time-drill and assessment materials.	Meet with the student at least once before the intervention to familiarize with the time-drill technique and timed math computation assessments.

Progress-Monitoring		
What to Write: Select a method to monitor student progress on this intervention. For the method selected, record what type of data is to be used, enter student baseline (starting-point) information, calculate an intervention outcome goal, and note how frequently you plan to monitor the intervention. Tip: Several ideas for classroom data collection appear on the right side of this table.		
Type of Data Used to Monitor: Curriculum-based measurement: math computation assessments: 2 minute single-skill probes		<b>Ideas for Intervention Progress-Monitoring</b> <ul style="list-style-type: none"> <li>Existing data: grades, homework logs, etc.</li> <li>Cumulative mastery log</li> <li>Rubric</li> <li>Curriculum-based measurement</li> <li>Behavior report card</li> <li>Behavior checklist</li> </ul>
Baseline	Outcome Goal	
12 correct digits per 2 minute probe	24 correct digits per 2 minute probe	
How often will data be collected? (e.g., daily, every other day, weekly): WEEKLY		

## Response to Intervention

# How To: Create a Written Record of Classroom Interventions

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Student:	<i>John Samuelson-Gr 4</i>	Interventionist(s):	<i>Mrs. Kennedy, classroom teacher</i>	Date Intervention Plan Was Written:	<i>10 October 2012</i>
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Description of the Student Problem:		<i>Slow math computation speed (computes multiplication facts at 12 correct digits in 2 minutes, when typical gr 4 peers compute at least 24 correct digits).</i>			

## Response to Intervention

### How To: Create a Written Record of Classroom Interventions

Intervention
<b>What to Write:</b> Write a brief description of the intervention(s) to be used with this student. TIP: If you have a script for this intervention, you can just write its name here and attach the script to this sheet.
<i>Math Computation Time Drill.(Rhymer et al., 2002)-See attached description</i>

Materials	Training
<b>What to Write:</b> Jot down materials (e.g., flashcards) or resources (e.g., Internet-connected computer) needed to carry out this intervention.	<b>What to Write:</b> Note what training--if any--is needed to prepare adult(s) and/or the student to carry out the intervention.
<i>Use math worksheet generator on <a href="http://www.interventioncentral.org">www.interventioncentral.org</a> to create all time-drill and assessment materials.</i>	<i>Meet with the student at least once before the intervention to familiarize with the time-drill technique and timed math computation assessments.</i>

# How To: Create a Written Record of Classroom Interventions

### Progress-Monitoring

**What to Write:** Select a method to monitor student progress on this intervention. For the method selected, record what type of data is to be used, enter student baseline (starting-point) information, calculate an intervention outcome goal, and note how frequently you plan to monitor the intervention. Tip: Several ideas for classroom data collection appear on the right side of this table.

Type of Data Used to Monitor: *Curriculum-based measurement: math computation assessments: 2 minute single-skill probes*

Baseline

*12 correct digits per 2 minute probe*

Outcome Goal

*24 correct digits per 2 minute probe*

How often will data be collected? (e.g., daily, every other day, weekly):

*WEEKLY*

#### Ideas for Intervention Progress-Monitoring

- Existing data: grades, homework logs, etc.
- Cumulative mastery log
- Rubric
- Curriculum-based measurement
- Behavior report card
- Behavior checklist

# How To: Create a Written Record of Classroom Interventions

## Classroom Intervention Planning Sheet: Math Computation Example

This worksheet is designed to help teachers to quickly create classroom plans for academic and behavioral interventions. (For a tutorial on how to fill out this sheet, review the accompanying directions.)

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*Math Computation Time Drill (Rhymer et al., 2002)*

*Explicit time-drills are a method to boost students' rate of responding on arithmetic-fact worksheets: (1) The teacher hands out the worksheet. Students are instructed that they will have 3 minutes to work on problems on the sheet. (2) The teacher starts the stop watch and tells the students to start work. (3) At the end of the first minute in the 3-minute span, the teacher 'calls time', stops the stopwatch, and tells the students to underline the last number written and to put their pencils in the air. Then students are told to resume work and the teacher restarts the stopwatch. (4) This process is repeated at the end of minutes 2 and 3. (5) At the conclusion of the 3 minutes, the teacher collects the student worksheets.*

### Materials

**What to Write:** Jot down materials (e.g., flashcards) or resources (e.g., Internet-connected computer) needed to carry out this intervention.

Use math worksheet generator on [www.interventioncentral.org](http://www.interventioncentral.org) to create all time-drill and assessment materials.

### Training

**What to Write:** Note what training—if any—is needed to prepare adult(s) and/or the student to carry out the intervention.

Meet with the student at least once before the intervention to familiarize with the time-drill technique and timed math computation assessments.

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**What to Write:** Select a method to monitor student progress on this intervention. For the method selected, record what type of data is to be used, enter student baseline (starting-point) information, calculate an intervention outcome goal, and note how frequently you plan to monitor the intervention. Tip: Several ideas for classroom data collection appear on the right side of this table.

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Baseline

12 correct digits per 2 minute probe

Outcome Goal

24 correct digits per 2 minute probe

How often will data be collected? (e.g., daily, every other day, weekly):  
WEEKLY

#### Ideas for Intervention Progress-Monitoring

- Existing data: grades, homework logs, etc.
- Cumulative mastery log
- Rubric
- Curriculum-based measurement
- Behavior report card
- Behavior checklist



### Academic Interventions: 7 'Big Ideas'

- *Interventions should be carried out with integrity.* The teacher should monitor the integrity of any classroom intervention closely, ensuring that the actual intervention conforms as closely as possible to the guidelines contained in the written intervention plan (Gansle & Noell, 2007) and taking steps when needed to bring the intervention back into alignment with good practices.

### Academic Interventions: 7 'Big Ideas'

- *Goal-setting and progress-monitoring should be a part of all academic interventions.* At their core, academic interventions are intended to improve student performance (Duhon, Mesmer, Atkins, Greguson, & Olinger, 2009). But teachers cannot know with certainty whether a student is actually benefiting from an intervention unless they set specific outcome goals up front and then collect data periodically throughout the intervention to verify that these goals are met (Wright 2007).

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### RTI: Academic & Behavioral Interventions



***Intervention Integrity.*** What are ways to measure the integrity with which interventions are carried out?

### Why Assess Intervention Integrity?

When a struggling student fails to respond adequately to a series of evidence-based interventions, that student is likely to face significant and potentially negative consequences, such as failing grades, long-term suspension from school, or even placement in special education.

It is crucial, then, that the school monitor the integrity with which educators implement each intervention plan so that it can confidently rule out poor or limited intervention implementation of the intervention as a possible explanation for any student's 'non-response'.

### Intervention Integrity Check: Direct Observation

Intervention integrity is best assessed through direct observation (Roach & Elliott, 2008).

- The key steps of the intervention are defined and formatted as an observational checklist.
- An observer watches as the intervention is conducted and checks off on the checklist those steps that were correctly carried out. The observer then computes the percentage of steps correctly carried out.

### Limitations of Direct Observation as an Intervention Integrity Check

- Direct observations are time-consuming to conduct.
- Teachers who serve as interventionists may at least initially regard observations of their intervention implementation as evaluations of their job performance, rather than as a child-focused RTI “quality check”.
- An intervention-implementation checklist typically does not distinguish between--or differentially weight--those intervention steps that are more important from those that are less so. If two teachers implement the same 10-step intervention plan, for example, with one instructor omitting a critical step and the other omitting a fairly trivial step, both can still attain the same implementation score of steps correctly completed.

Source: Gansle, K. A., & Noell, G. H. (2007). The fundamental role of intervention implementation in assessing response to intervention. In S. R. Jimerson, M. K. Burns, & A. M. VanDerHeyden (Eds.), *Response to intervention: The science and practice of assessment and intervention* (pp. 244-251).

**Intervention Script Builder** for: Student Name: \_\_\_\_\_ Grade: \_\_\_\_\_

Teacher/Team: \_\_\_\_\_ Intervention Start Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Description of the Target Academic or Behavior Concern: \_\_\_\_\_

'Yes/No' Step-by-Step Intervention Check

# Intervention Script Builder

Each Step Marked 'Negotiable' or 'Non-Negotiable'

Intervention Check	Intervention Preparation Steps: Describe any preparation (creation or purchase of materials, staff training, etc.) required for this intervention.	Negotiable? (Hawkins et al., 2008)
This step took place Y__ N__	1. _____	<input type="checkbox"/> Negotiable Step <input type="checkbox"/> Non-Negotiable Step
This step took place Y__ N__	2. _____	<input type="checkbox"/> Negotiable Step <input type="checkbox"/> Non-Negotiable Step
This step took place Y__ N__	3. _____	<input type="checkbox"/> Negotiable Step <input type="checkbox"/> Non-Negotiable Step
Intervention Check	Intervention detail so that _____ them.	Negotiable? (Hawkins et al., 2008)
This step took place Y__ N__	1. _____	<input type="checkbox"/> Negotiable Step <input type="checkbox"/> Non-Negotiable Step
This step took place Y__ N__	2. _____	<input type="checkbox"/> Negotiable Step <input type="checkbox"/> Non-Negotiable Step
This step took place Y__ N__	3. _____	<input type="checkbox"/> Negotiable Step <input type="checkbox"/> Non-Negotiable Step
This step took place Y__ N__	4. _____	<input type="checkbox"/> Negotiable Step <input type="checkbox"/> Non-Negotiable Step
This step took place Y__ N__	5. _____	<input type="checkbox"/> Negotiable Step <input type="checkbox"/> Non-Negotiable Step
This step took place Y__ N__	6. _____	<input type="checkbox"/> Negotiable Step <input type="checkbox"/> Non-Negotiable Step

### Supplemental Methods to Collect Data About Intervention Integrity

Teacher Self-Ratings: As a form of self-monitoring, directing interventionists to rate the integrity of their own interventions may prompt higher rates of compliance (e.g., Kazdin, 1989). However, because teacher self-ratings tend to be 'upwardly biased' (Gansle & Noell, 2007, p. 247), they should not be relied upon as the sole rating of intervention integrity. One suggestion for collecting regular teacher reports on intervention implementation in a convenient manner is to use Daily Behavior Reports (DBRs; Chafouleas, Riley-Tillman, & Sugai, 2007).

#### Sources:

Chafouleas, S., Riley-Tillman, T.C., & Sugai, G. (2007). *School-based behavioral assessment: Informing intervention and instruction*. New York: Guilford Press.

Gansle, K. A., & Noell, G. H. (2007). The fundamental role of intervention implementation in assessing response to intervention. In S. R. Jimerson, M. K. Burns, & A. M. VanDerHeyden (Eds.), *Response to intervention: The science and practice of assessment and intervention* (pp. 244-251).

Kazdin, A. E. (1989). *Behavior modification in applied settings* (4th ed.). Pacific Grove, CA: Brooks/Cole.





### Supplemental Methods to Collect Data About Intervention Integrity

Intervention Permanent Products: If an intervention plan naturally yields permanent products (e.g., completed scoring sheets, lists of spelling words mastered, behavioral sticker charts), these products can be periodically collected and evaluated as another indicator of intervention integrity (Gansle & Noell, 2007).

Source:

Gansle, K. A., & Noell, G. H. (2007). The fundamental role of intervention implementation in assessing response to intervention. In S. R. Jimerson, M. K. Burns, & A. M. VanDerHeyden (Eds.), *Response to intervention: The science and practice of assessment and intervention* (pp. 244-251).

### Intervention Integrity: Verify Through a Mix of Information Sources

Schools should consider monitoring intervention integrity through a mix of direct and indirect means, including direct observation and permanent products (Gansle & Noell, 2007), as well as interventionist self-ratings (Roach & Elliott, 2008).

Source:

Gansle, K. A., & Noell, G. H. (2007). The fundamental role of intervention implementation in assessing response to intervention. In S. R. Jimerson, M. K. Burns, & A. M. VanDerHeyden (Eds.), *Response to intervention: The science and practice of assessment and intervention* (pp. 244-251).

Roach, A. T., & Elliott, S. N. (2008). Best practices in facilitating and evaluating intervention integrity. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology V* (pp.195-208).

## Response to Intervention

# ‘Selecting Methods to Track Intervention Integrity’...

### Selecting Methods to Track Intervention Integrity for \_\_\_\_\_

Schools can use three general sources of data to obtain direct or indirect information about intervention integrity: (1) work products and records generated during the intervention, (2) teacher self-reports and self-ratings, and (3) direct classroom observation of the intervention as it is being carried out. Use this form to select an efficient combination of methods to measure the overall integrity with which an intervention is being implemented.

*Work products and records generated during the intervention.* Student work samples and other records such as intervention contact logs generated naturally as part of the intervention can be collected to give some indication of intervention integrity (Gansle & Noell, 2007). What work products or other intervention records can be collected to help to track the integrity of the intervention?

Type of Work Product/ Other Intervention Documentation	Person(s) Responsible	Frequency of Data Collection
_____	_____	_____
_____	_____	_____
_____	_____	_____

*Teacher self-reports and self-ratings.* The teacher or other educators responsible for the intervention can periodically complete formal or informal self-ratings to provide information whether the intervention is being carried out with integrity (Gansle & Noell, 2007). Teacher self-ratings can be done a variety of ways. At the end of each intervention session, for example, the instructor may complete a brief rating scale (e.g., 0 = intervention did not occur; 4 = intervention was carried out completely and correctly). Or the teacher may periodically be emailed a short, open-ended intervention integrity questionnaire. What method(s) of teacher self-reports/self-ratings will be used to track the integrity of this intervention?

Type of Teacher Self-Report or Self-Rating	Person(s) Responsible	Frequency of Data Collection
_____	_____	_____
_____	_____	_____
_____	_____	_____

*Direct observation of the intervention steps.* The intervention is divided into a series of discrete steps to create an observation checklist. An observer then visits the classroom with checklist in hand to watch the intervention being implemented and to note whether each step of the intervention is completed correctly (Roach & Elliott, 2008). The direct observation of intervention integrity yields a single figure: ‘percentage of intervention steps correctly completed’. To compute this figure, the observer (1) adds up the number of intervention steps correctly carried out during the observation, (2) divides that sum by the total number of steps in the intervention, and (3) multiplies the quotient by 100 to calculate the percentage of steps in the intervention that were done in an acceptable manner.

Who will be responsible for creating an intervention-integrity checklist containing the essential steps of the intervention?	Who will use the intervention-integrity checklist to conduct observations of the intervention?	How often or on what dates will classroom observations of the intervention be conducted?
_____	_____	_____

Gansle, K. A., & Noell, G. H. (2007). The fundamental role of intervention implementation in assessing response to intervention. In S. R. Jimerson, M. K. Burns, & A. M. VanDerHeyden (Eds.), *Response to intervention: The science and practice of assessment and intervention* (pp. 244-251). New York: Springer Publishing.

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*Work products and records generated during the intervention.* Student work samples and other records such as intervention contact logs generated naturally as part of the intervention can be collected to give some indication of intervention integrity (Gansle & Noell, 2007). What work products or other intervention records can be collected to help to track the integrity of the intervention?

Type of Work Product/ Other Intervention Documentation	Person(s) Responsible	Frequency of Data Collection
_____	_____	_____
_____	_____	_____
_____	_____	_____

### 'Selecting Methods to Track Intervention Integrity'...

*Teacher self-reports and self-ratings.* The teacher or other educators responsible for the intervention can periodically complete formal or informal self-ratings to provide information whether the intervention is being carried out with integrity (Gansle & Noell, 2007).. Teacher self-ratings can be done a variety of ways. At the end of each intervention session, for example, the instructor may complete a brief rating scale (e.g., 0 = intervention did not occur; 4 = intervention was carried out completely and correctly). Or the teacher may periodically be emailed a short, open-ended intervention integrity questionnaire. What method(s) of teacher self-reports/self-ratings will be used to track the integrity of this intervention?

Type of Teacher Self-Report or Self-Rating

Person(s) Responsible

Frequency of Data Collection

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### 'Selecting Methods to Track Intervention Integrity'...

*Direct observation of the intervention steps.* The intervention is divided into a series of discrete steps to create an observation checklist. An observer then visits the classroom with checklist in hand to watch the intervention being implemented and to note whether each step of the intervention is completed correctly (Roach & Elliott, 2008). The direct observation of intervention integrity yields a single figure: 'percentage of intervention steps correctly completed'. To compute this figure, the observer (1) adds up the number of intervention steps correctly carried out during the observation, (2) divides that sum by the total number of steps in the intervention, and (3) multiplies the quotient by 100 to calculate the percentage of steps in the intervention that were done in an acceptable manner.

Who will be responsible for creating an intervention-integrity checklist containing the essential steps of the intervention?

Who will use the intervention-integrity checklist to conduct observations of the intervention?

How often or on what dates will classroom observations of the intervention be conducted?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### RTI: Academic & Behavioral Interventions



### *Academic Interventions: A Sampler.*

What are some examples of research-based academic interventions?



# Kindergarten: Counting & Cardinality

## Counting and Cardinality

K.CC

### **Know number names and the count sequence.**

1. Count to 100 by ones and by tens.
2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

*Source:* National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). Common core state standards for mathematics. Washington, DC: Authors. Retrieved from <http://www.corestandards.org/> p. 11

# Building Number Sense Through a Counting Board Game

**DESCRIPTION:** The student plays a number-based board game to build skills related to 'number sense', including number identification, counting, estimation skills, and ability to visualize and access specific number values using an internal number-line (Siegler, 2009).

Source: Siegler, R. S. (2009). *Improving the numerical understanding of children from low-income families. Child Development Perspectives, 3(2), 118-124.*

# Building Number Sense Through a Counting Board Game


## MATERIALS:

- *Great Number Line Race!* form
- Spinner divided into two equal regions marked "1" and "2" respectively. (NOTE: If a spinner is not available, the interventionist can purchase a small blank wooden block from a crafts store and mark three of the sides of the block with the number "1" and three sides with the number "2".)

Source: Siegler, R. S. (2009). *Improving the numerical understanding of children from low-income families. Child Development Perspectives, 3(2), 118-124.*

# Response to Intervention

*The Great Number-Line Race!*



Start

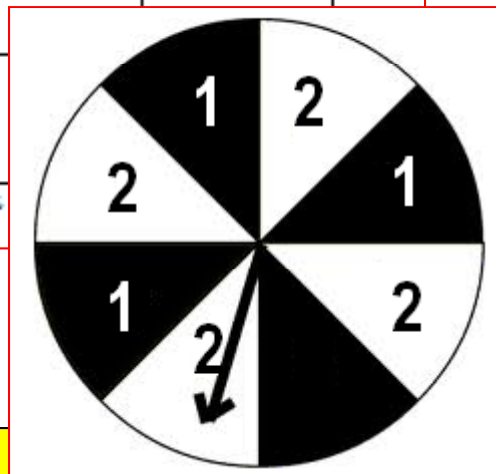
1 2 3 4 5 6 7 8 9 10

Date: \_\_\_\_\_ Start Time: \_\_\_\_\_: \_\_\_\_\_: \_\_\_\_\_ End Time: \_\_\_\_\_: \_\_\_\_\_

Directions: Mark the winner for each game with an 'X' in the table below.

Players	Game 1	Game 2	Game 3	Game 4	Game 5	Game 6	Game 7
1: _____							
2: _____							

Sources: Siegler, R. S. (2009). Improving the numerical understanding of children from low-income families. *Child Development Perspectives*,



Source: Siegler, R. S. (2009). *Improving the numerical understanding of children from low-income families. Child Development Perspectives*, 3(2), 118-124.

# Building Number Sense Through a Counting Board Game

**INTERVENTION STEPS:** A counting-board game session lasts 12 to 15 minutes, with each game within the session lasting 2-4 minutes. Here are the steps:

1. *Introduce the Rules of the Game.* The student is told that he or she will attempt to beat another player (either another student or the interventionist). The student is then given a penny or other small object to serve as a game piece. The student is told that players takes turns spinning the spinner (or, alternatively, tossing the block) to learn how many spaces they can move on *the Great Number Line Race!* board.

Each player then advances the game piece, moving it forward through the numbered boxes of the game-board to match the number "1" or "2" selected in the spin or block toss.

Source: Siegler, R. S. (2009). *Improving the numerical understanding of children from low-income families. Child Development Perspectives, 3(2), 118-124.*

# Building Number Sense Through a Counting Board Game

**INTERVENTION STEPS:** A counting-board game session lasts 12 to 15 minutes, with each game within the session lasting 2-4 minutes. Here are the steps:

1. *Introduce the Rules of the Game (cont.).*

When advancing the game piece, the player must call out the number of each numbered box as he or she passes over it. For example, if the player has a game piece on box 7 and spins a "2", that player advances the game piece two spaces, while calling out "8" and "9" (the names of the numbered boxes that the game piece moves across during that turn).

Source: Siegler, R. S. (2009). *Improving the numerical understanding of children from low-income families. Child Development Perspectives, 3(2), 118-124.*

# Building Number Sense Through a Counting Board Game

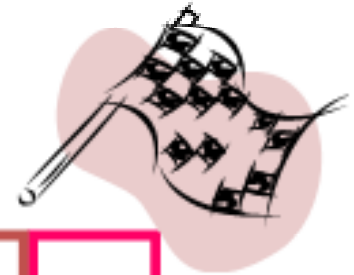
**INTERVENTION STEPS:** A counting-board game session lasts 12 to 15 minutes, with each game within the session lasting 2-4 minutes. Here are the steps:

2. *Record Game Outcomes.* At the conclusion of each game, the interventionist records the winner using the form found on the *Great Number Line Race!* form. The session continues with additional games being played for a total of 12-15 minutes.
3. *Continue the Intervention Up to an Hour of Cumulative Play.* The counting-board game continues until the student has accrued a total of at least one hour of play across multiple days. (The amount of cumulative play can be calculated by adding up the daily time spent in the game as recorded on the *Great Number Line Race!* form.)

Source: Siegler, R. S. (2009). *Improving the numerical understanding of children from low-income families.* *Child Development Perspectives*, 3(2), 118-124.

# Response to Intervention

## The Great Number-Line Race!



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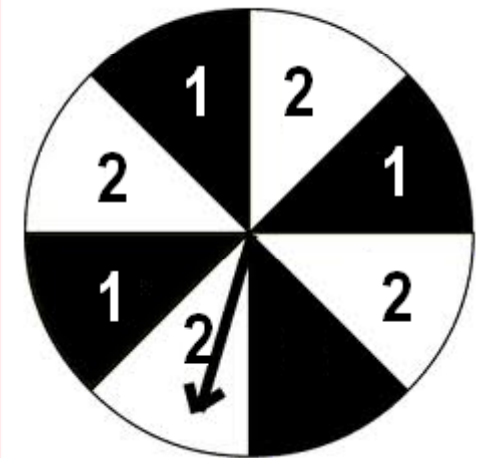


Date: \_\_\_\_\_ Start Time: \_\_\_\_\_: \_\_\_\_\_: \_\_\_\_\_ End Time: \_\_\_\_\_: \_\_\_\_\_

Directions: Mark the winner for each game with an 'X' in the table below.

Players	Game 1	Game 2	Game 3	Game 4	Game 5	Game 6	Game 7
1: _____							
2: _____							

Sources: Siegler, R. S. (2009). Improving the numerical understanding of children from low-income families. *Child Development Perspectives*,



Source: Siegler, R. S. (2009). Improving the numerical understanding of children from low-income families. *Child Development Perspectives*, 3(2), 118-124.



# Grade 2: Operations & Algebraic Thinking

## Operations and Algebraic Thinking

2.OA

### Add and subtract within 20.

2. Fluently add and subtract within 20 using mental strategies.<sup>2</sup> By end of Grade 2, know from memory all sums of two one-digit numbers.

*Source:* National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). Common core state standards for mathematics. Washington, DC: Authors. Retrieved from <http://www.corestandards.org/> p. 19

# Cover-Copy-Compare: Math Facts

In this intervention to promote acquisition of math facts, the student is given a sheet with the math facts with answers. The student looks at each math model, covers the model briefly and copies it from memory, then compares the copied version to the original correct model (Skinner, McLaughlin & Logan, 1997).

Response

Cover-Copy-  
Compare Math  
Fact Student  
Worksheet

Worksheet: Cover-Copy-Compare student: \_\_\_\_\_ Date: \_\_\_\_\_

Spelling Words	Student Response
1. $9 \times 7 = 63$	1a. $9 \times 7 = 63$
	1b.
2. $9 \times 2 = 18$	2a.
	2b.
3. $9 \times 4 = 36$	3a.
	3b.
4. $9 \times 1 = 9$	4a.
	4b.
5. $9 \times 9 = 81$	5a.
	5b.
6. $9 \times 6 = 54$	6a.
	6b.
7. $9 \times 3 = 27$	7a.
	7b.
8. $9 \times 5 = 45$	8a.
	8b.
9. $9 \times 10 = 90$	9a.
	9b.
10. $9 \times 8 = 72$	10a.
	10b.

# Reading Standards: Foundation Skills for K-5

## Grade 3 students:

### Fluency

4. Read with sufficient accuracy and fluency to support comprehension.
  - a. Read grade-level text with purpose and understanding.
  - b. Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings
  - c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

*Source: National Governors Association 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. 17*

### Classroom Academic Interventions: Reading Fluency

- ASSISTED CLOZE INTERVENTION: INCREASE READING FLUENCY. Fluency is the goal of this reading intervention. Sessions last 10-15 minutes. The teacher selects a passage at the student's instructional level. The teacher reads aloud from the passage while the student follows along silently and tracks the place in the text with a finger. Intermittently, the teacher pauses and the student is expected to read aloud the next word in passage. Then the teacher continues reading. The process continues until the entire passage has been read. Then the student is directed to read the text aloud while the teacher follows along silently. Whenever the student commits a reading error or hesitates for 3 seconds or longer (whether during the assisted cloze or independent reading phase), the teacher stops the student, points to and says the error word, has the student read the word aloud correctly, has the student read the surrounding phrase that includes the error word, and then continues the current reading activity.

# Classroom Academic Interventions: Reading Fluency

- **PAIRED READING: INCREASE READING FLUENCY.** This reading fluency intervention prompts the student to read independently with prompt corrective feedback. Each session lasts 10-15 minutes, using an engaging passage at the student's instructional level. Teacher and student begin the session reading aloud in unison. During the session, at the student's choosing, he/she gives a silent signal (e.g., lightly tapping the teacher's wrist); at this signal, the teacher stops reading aloud and instead follows along silently while the student continues to read aloud. Whenever the student commits a reading error or hesitates for 3 seconds or longer (during either unison or independent reading), the teacher stops the student, points to and says the error word, has the student read the word aloud correctly, has the student read the surrounding phrase that includes the error word, and resumes reading in unison. The teacher also praises the student for using the silent signal to read aloud independently and occasionally praises other aspects of the student's reading performance or effort.

*Source:* Homan, S. P., Klesius, J. P., & Hite, C. (1993). Effects of repeated readings and nonrepetitive strategies on students' fluency and comprehension. *Journal of Educational Research*, 87(2), 94-99.

# Reading Standards for Informational Text: 6-12

### Grades 9–10 students:

#### Key Ideas and Details

1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
3. Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.

*Source: National Governors Association 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. 38*

### Reading Comprehension: Self-Management Strategies

- **READING-REFLECTION PAUSES:** This strategy is useful both for students who need to monitor their understanding as well as those who benefit from brief breaks when engaging in intensive reading as a means to build up endurance as attentive readers. The student decides on a reading interval (e.g., every four sentences; every 3 minutes; at the end of each paragraph). At the end of each interval, the student pauses briefly to recall the main points of the reading. If the student has questions or is uncertain about the content, the student rereads part or all of the section just read.



### Reading Comprehension: Self-Management Strategies

- RETAIN TEXT INFORMATION WITH PARAPHRASING (RAP). The student is trained to use a 3-step cognitive strategy when reading each paragraph of an informational-text passage: (1) READ the paragraph; (2) ASK oneself what the main idea of the paragraph is and what two key details support that main idea; (3) PARAPHRASE the main idea and two supporting details into one's own words. This 3-step strategy is easily memorized using the acronym RAP (read-ask-paraphrase). OPTIONAL BUT RECOMMENDED: Create an organizer sheet with spaces for the student to record main idea and supporting details of multiple paragraphs—to be used with the RAP strategy—to be used as an organizer and verifiable work product.

*Source:* Hagaman, J. L., Casey, K. J., & Reid, R. (2010). The effects of the paraphrasing strategy on the reading comprehension of young students. *Remedial and Special Education, 33*, 110-123.

### RTI: Academic & Behavioral Interventions

#### *Sample Behavioral Interventions.*

What are examples of behavioral strategies that can be used in classrooms to increase compliance and connect with students?



### Behavior Management Strategies: Academic Focus

- **BEHAVIORAL MOMENTUM: INCREASING COMPLIANCE.** Students with low-frustration tolerance or lack of confidence may balk when asked to complete challenging academic tasks assigned as independent seatwork. A strategy to increase the probability that a student will attempt a challenging academic task is to precede that task with a short series of brief, easy academic tasks. (For example, a student may do three easy problems on a math worksheet before encountering a challenge problem.) The student builds 'behavioral momentum' in completing the easy items and is thus 'primed' to attempt the challenge item that might otherwise derail them.

### Behavior Management Strategies: Academic Focus

- REDUCE RESPONSE EFFORT: INCREASING COMPLIANCE. Teachers can increase student motivation and compliance through any method that reduces the apparent 'response effort' of an academic task- so long as that method does not hold the student to a lesser academic standard than classmates. Appropriate response-effort examples include (1) breaking a larger student assignment into smaller 'chunks' and providing the student with performance feedback and praise for each completed 'chunk' of assigned work, and (2) arranging for students to start challenging reading or homework assignments in class as a cooperative activity and then complete the remainder on their own.

### Behavior Management Strategies: Communication Tools

- EMPHASIZE THE POSITIVE IN TEACHER REQUESTS: INCREASING STUDENT COMPLIANCE. When an instructor's request has a positive 'spin', that teacher is less likely to trigger a power struggle and more likely to gain student compliance. Whenever possible, the teacher avoids using negative phrasing (e.g., "If you don't return to your seat, I can't help you with your assignment"). Instead, the teacher restates requests in positive terms (e.g., "I will be over to help you on the assignment just as soon as you return to your seat").

### Lack of Teacher-Student Relationship: What to Avoid

- **What the Research Says:** At times, instructors and students can fall into a 'negative reinforcement trap' (Maag, 2001; p. 176) that actively undercuts positive relationships: A student who has difficulty with the classwork misbehaves and is then sent by the teacher to the principal's office. Both teacher and student are reinforced by the student's exclusion from the classroom: The teacher is negatively reinforced by having a difficult student removed from the room and the student is *also* negatively reinforced by being allowed to escape the challenging classwork. Because this scenario is reinforcing to both parties, it is very likely to be repeated with increasing frequency unless the teacher intervenes to break the negative cycle.

### Behavior Management Strategies: Relationship-Building

- MAINTAIN A HIGH RATIO OF POSITIVE INTERACTIONS: BUILDING STUDENT CONNECTIONS. Teachers can increase the odds of building a positive relationship with any student by maintaining a ratio of at least three positive teacher-student interactions (e.g., greeting, positive conversation, high-five) for every negative (disciplinary) interaction (e.g., reprimand).

### Behavior Management Strategies: Relationship-Building

- STRIVE FOR DAILY POSITIVE INTERACTIONS: BUILDING STUDENT CONNECTIONS. If the teacher lacks a positive relationship with a particular student, the teacher makes the commitment to have at least one positive verbal interaction per class period with that student (e.g., greeting at the door, positive conversation, praise for student discussion comments). Whenever possible, the teacher continues to interact in positive ways with the student throughout the rest of the class period through both verbal (e.g., praise comment after a student remark) and non-verbal (e.g., thumbs-up sign, smile) means. In all such interactions, the teacher maintains a polite, respectful tone.



### Behavior Management Strategies: Relationship-Building

- **TEACHER GREETING: INCREASE ACADEMIC ENGAGEMENT.** A personalized greeting at the start of a class period can boost class levels of academic engagement. The teacher spends a few seconds greeting each student by name at the classroom door at the beginning of class.

### Behavior Management Strategies: Relationship-Building

- 'TWO-BY-TEN': STRUCTURING POSITIVE TEACHER-STUDENT INTERACTIONS. The teacher makes a commitment to have a 2-minute conversation with the student across 10 consecutive school days (20 minutes of cumulative positive contact). This strategy ('non-contingent teacher attention') can be helpful with students who lack a positive connection with the teacher.

7

## Contact

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## Intervention Planner for Behavior



Select ideas to manage the behaviors of individual students, small groups, and entire classrooms.

If you have any suggestions or comments about this tool, please mail me.

### Untitled Document

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#### Intervention Planner for Behavior

The Intervention Planner for Behavior is a free application that allows teachers, administrators, and other school personnel to browse a range of strategies to improve student behaviors and to develop customized behavior-management plans for individual students, small groups, or even an entire class. Once you have created a unique behavior plan, you can download the plan in text or PDF format and even email it to others. And if you have a free Intervention Central account, you can also save behavior plans that you create online for later retrieval.

#### Directions

Click [HERE](#) to download the full Intervention Planner for Behavior manual.

- To browse behavior intervention ideas, select any of the categories from the 'Select Checklist' drop-down menu. Strategies for the selected category will then load into the 'Selected Checklist' box. Click on the arrow next to intervention ideas that you would like to add to your customized intervention plan and those ideas will load into the 'Your Checklist' box. Items in this box will go into your plan.
- You can add your own notes to any intervention idea in the 'Your Checklist' box by clicking the 'edit' button that appears next to it. A window will open and you will be able to type in your notes.
- When you are ready to download your customized intervention plan, you can do so by clicking on the tabs of the report choices below. You can download PDF or RTF (Microsoft-Word-ready) documents and can email these documents to others. You can also apply a unique name to any report by typing that name into the 'Report Title' box that appears near the bottom of the page under 'Printing Options'.
- If you have already created a free account on Intervention Central, you can save your intervention plan to that account. Just click the 'Save' button at the top of the page.

Select Checklist: **Academic Adjustments**

#### Selected Checklist

**ALTERNATIVE ACADEMIC RESPONSE FORMATS: REDUCING STUDENT FRUSTRATION.** For some students, a trigger for misbehavior is that they are asked to complete an academic task in a response format that they find difficult or frustrating. A strategy to address this issue is to offer the student a more acceptable alternative response format. For example, a student who does not like to write by hand can be given access to a keyboard to draft an essay while a student who is put off by completing a math computation worksheet independently can answer the same math facts orally from flashcards. Note that alternative response formats should preserve the rigor of the underlying academic expectations.

**BEHAVIORAL MOMENTUM: INCREASING COMPLIANCE.** Students with low-frustration tolerance or lack of

#### Your Checklist

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## Intervention Planner for Behavior

<http://www.interventioncentral.org/tools/behavior-intervention-planner>

This application presents a range of intervention strategies to address behavior. Some of the strategies target student motivation.

### RTI: Academic & Behavioral Interventions



*Next Steps.* What are the recommended 'next steps' for this module?

## Interventions: Recommended Next Steps...

1. *Build an Academic Intervention Bank.* Develop an intervention bank with academic strategies (e.g., reading, math, writing) for classroom teacher use.
2. *Build a Behavioral Intervention Bank.* Develop an intervention bank with behavioral strategies for classroom teacher use in managing individual students and larger groups.

### Interventions: Recommended Next Steps...

- 3. Provide Coaching Support.* Identify 'coaches' on staff with expertise in various types of behavioral and academic strategies to assist teachers with intervention development and implementation.
- 4. Measure Intervention Integrity.* Create guidelines for interventionists to measure the integrity of the interventions that they carry out.

# Handout: Next Steps: p. 34

05:00

[www.interventioncentral.org](http://www.interventioncentral.org)

- In your groups, discuss the content and recommendations for 'next steps' presented in this portion of the workshop.
- Jot down any immediate next steps that you think are important to prepare to support your schools in RTI.

practices and programs that have been researched and behavioral performance. This segment presents definitions (ns) provides clear guidelines for documenting intervention resources available online to all participating tion, use, and documentation of interventions at tiers 1-3.

Who in your CAST network of schools will you need to enlist to help you with this goal?:

1. \_\_\_\_\_
2. \_\_\_\_\_

What resources will you need beyond those supplied in this training to accomplish the goal?

1. \_\_\_\_\_
2. \_\_\_\_\_