

Using the Taxonomy of Intervention Intensity Within the Data-Based Individualization Process: A Mathematics Example Participant Workbook



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Taxonomy of Intervention Intensity K-W-L

What Does It Help Me <u>KNOW</u>?	What More Do I <u>WANT</u> to Know?	How Will I <u>LEARN</u> More?



The *Taxonomy of Intervention Intensity** was developed based on existing research to support educators in evaluating and building intervention intensity.



Dimensions*	Description
Strength	How well the program works for students with intensive intervention needs, expressed in terms of effect sizes. Effect sizes of above .25 indicate an intervention has value in improving outcomes. Effect sizes of 0.35 to 0.40 are moderate; effect sizes of 0.50 or larger are strong (preferred).
Dosage	The number of opportunities a student has to respond and receive corrective feedback. It refers to the size of the instructional group, the number of minutes each session lasts, and the number of sessions provided per week.
Alignment	How well the program (a) addresses the target student's full set of academic skill deficits, (b) does <i>not</i> address skills the target student has already mastered (extraneous skills for that student), and (c) incorporates a meaningful focus on grade-appropriate curricular standards.
Attention to transfer	The extent to which an intervention is designed to help students (a) transfer the skills they learn to other formats and contexts and (b) realize connections between mastered and related skills.
Comprehensiveness	The number of explicit instruction principles the intervention incorporates (e.g., providing explanations in simple, direct language; modeling efficient solution strategies instead of expecting students to discover strategies on their own; providing practice so students use the strategies to generate many correct responses; and incorporating systematic cumulative review).
Behavioral support	The extent to which the program incorporates (a) self-regulation and executive function components and (b) behavioral principles to minimize nonproductive behavior.
Individualization	A validated, data-based process for individualizing intervention, in which the educator systematically adjusts the intervention over time, in response to ongoing progress monitoring data, to address the student's complex learning needs.



*Fuchs, L.S, Fuchs, D. & Malone, A.S. (2017). The Taxonomy of Intervention Intensity. *TEACHING Exceptional Children*, 50(1), 35–43.

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Dimensions*	Description
Strength	How well the program works for students with intensive intervention needs, sometimes expressed as a promising or effective program by a reliable source (e.g., NCII Tools Charts, WWC).
Dosage	The number of opportunities a student has to (a) respond (i.e., practice/demonstrate skill), (b) receive positive feedback (e.g., praise, tokens, points), (c) exchange for backup reinforcers, and (d) receive corrective feedback.
Alignment	How well the program (a) addresses school-wide expectations, (b) addresses classroom/teacher expectations, (c) addresses student's skill deficits, (d) matches rewards to student's preferences and/or function of problem behavior, and (e) does not address extraneous skills.
Attention to transfer	The extent to which an intervention emphasizes how and when a student uses skills across contexts/situations and includes opportunities to practice using skills across context/situations. The program reinforces the use of skills across contexts/situations.
Comprehensiveness	The extent to which the intervention includes a plan for (a) teaching appropriate behavior, (b) adjusting antecedent conditions to prevent problem behavior, (c) reinforcing appropriate behavior, (d) minimizing reinforcement for problem behavior, (e) fading supports (and supports can be easily faded), (f) monitoring fidelity, (g) working in conjunction with related services, and (h) communicating with parents.
Academic support	The extent to which the program (a) can be easily integrated within context of academic instruction, (b) complements rather than supplants academic focus, and (c) includes procedures for reinforcing responses related to academic achievement (e.g., engagement, work completion).
Individualization	A validated, data-based process for individualizing intervention, in which the educator systematically adjusts the intervention over time, in response to ongoing progress monitoring, to address the student's complex learning needs.



*Adapted from Fuchs, L.S, Fuchs, D. & Malone, A.S. (2017). The Taxonomy of Intervention Intensity. *TEACHING Exceptional Children*, 50(1), 35–43.

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Current Intervention Brainstorm

1. Brainstorm interventions.

Mathematics

2. Describe your process for selecting an intervention for a specific student.

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3. Describe your process for adapting an intervention for this student.

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What is the Taxonomy of Intervention Intensity?

The Taxonomy of Intervention Intensity* was developed based on existing research to support educators in evaluating and building intervention intensity and considering the integrated academic and behavioral supports needed by many students with intensive needs. It includes seven dimensions that help you to answer the following questions:



Does evidence suggest the intervention is expected to lead to improved outcomes (**strength**)?



Will the group size, duration, structure, and frequency provide sufficient opportunities to respond (**dosage**)?



Does the intervention match the student's identified needs (**alignment**)?



Does it assist the student in generalizing the learned skills to general education or other tasks (**attention to transfer**)?



Does the intervention include elements of explicit instruction (**comprehensiveness**)?



Does the student have opportunities to develop the behavior skills necessary to be successful (**behavioral support**)?

Can the intervention be easily integrated into academic instruction (**academic support**)?



Can the intervention be individualized with a data-based process to meet student needs (**individualization**)?

Learn more about the Taxonomy of Intervention Intensity and find resources to support implementation

<https://intensiveintervention.org/taxonomy-intervention-intensity>

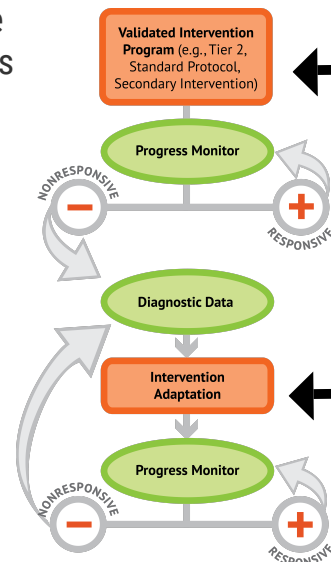
The Taxonomy of Intervention Intensity* was adapted from Fuchs, L. S., Fuchs, D., & Malone, A. S. (2017). The Taxonomy of Intervention Intensity. *TEACHING Exceptional Children*, 50(1), 35-43. The National Center on Intensive Intervention in coordination with a technical working group of experts has refined and expanded the Taxonomy to incorporate considerations for both academics and behavior and lessons learned from implementation in the field.



When do I use the Taxonomy of Intervention Intensity?

The seven dimensions of the Taxonomy of Intervention Intensity can help educators make informed, systematic decisions in the context of the data-based individualization (DBI) process. DBI is a research-based process for individualizing and intensifying interventions through the systematic use of assessment data, validated interventions, and research-based adaptation strategies. The Taxonomy can help educators:

DBI Process



Taxonomy Dimensions

1. Strength
2. Dosage
3. Alignment
4. Attention to Transfer
5. Comprehensiveness
6. Behavioral or Academic Support
7. Individualization



Evaluate current interventions

Already **have an intervention**? Use the dimensions of the Taxonomy to evaluate its strengths and limitations for your target population.



Select a new intervention

Looking for a **new intervention**? Rating the dimensions of potential interventions can help educators compare their strengths and limitations to support selection.

Intensify the intervention



Even the best intervention is not effective for every student. Need to intensify your intervention? The dimensions of the Taxonomy in combination with student data and teacher expertise can help guide the **adaptations or intensification** of the intervention over time.

Interested in learning more about what NCII has to offer? Connect with us!



Taxonomy of Intervention Intensity Rubric for Academic Interventions

Directions: Use the rubric to guide ratings of your validated intervention program. Note that there are no “hard and fast rules” for rating the degree to which an intervention addresses a standard. A rater must consider the characteristics of the student as well as the intervention context. The intent of the rubric and rating is to help you to understand program strengths and weaknesses.

Taxonomy of Intervention Intensity for Academic Interventions

	0 Fails to Address Standard	1 Addresses Standard Minimally	2 Addresses Standard Moderately	3 Addresses Standard Proficiently
Strength	<ul style="list-style-type: none"> ▪ No validated studies ▪ No effect size can be determined ▪ Reported effect size is < 0.2 	Effect size 0.2 - 0.34 (researcher-designed measure)	Effect size 0.35 - 0.55 (researcher-designed measure) -OR- Effect size 0.20 - 0.3 (standardized measure)	Effect size > 0.55 (researcher-designed measure) -OR- Effect size > 0.3 (standardized measure)
Dosage	Same as Tier I (opportunities to respond and receive corrective feedback are similar to Tier 1).	Slightly more than Tier 1 (e.g., 2-3x more opportunities to respond and receive corrective feedback).	Same as Tier 2 (e.g., 4-5x more opportunities to respond and receive corrective feedback).	Substantially more than Tier 2 (>5x more opportunities to respond and receive corrective feedback).
Alignment	Does not align to student’s needs.	Only addresses some of a student’s deficits, overemphasizes already mastered skills, and is not aligned to grade-level standards.	Addresses most student deficits, does not overemphasize already mastered skills, and aligns to curriculum standards.	Addresses all of a student’s deficits, does not overemphasize already mastered skills, and aligns to curriculum standards.

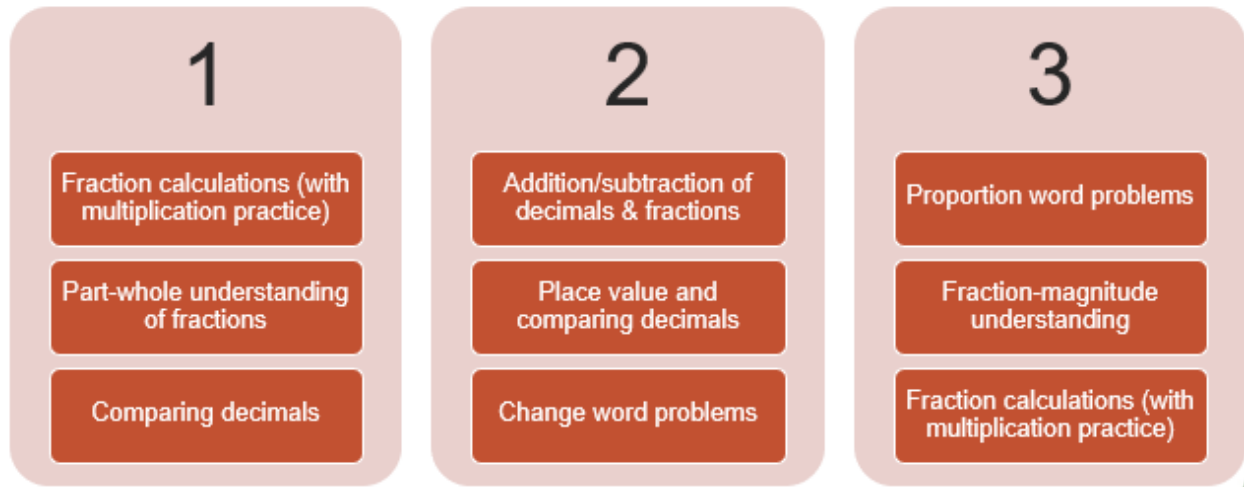
Promoting Transfer	Does not promote transfer.	Promotes transfer in 1 of the following ways: <ul style="list-style-type: none"> Promotes self-regulation and goal setting Cumulative review Varied contexts 	Promotes transfer in 2–3 of the following ways: <ul style="list-style-type: none"> Promotes self-regulation and goal setting Cumulative review Varied contexts 	Promotes transfer in all of the following ways: <ul style="list-style-type: none"> Promotes self-regulation and goal setting Cumulative review Varied contexts Empirical evidence of transfer
Comprehensiveness	Does not incorporate any principles of explicit instruction.	Incorporates 1–2 of the following principles of explicit instruction: <ul style="list-style-type: none"> Provides directions in simple, direct language. Models efficient strategies. Ensures sufficient background knowledge. Gradually fades instructional support. Provides sufficient independent practice. Incorporates systematic cumulative review. 	Incorporates 3–4 of the following principles of explicit instruction: <ul style="list-style-type: none"> Provides directions in simple, direct language. Models efficient strategies. Ensures sufficient background knowledge. Gradually fades instructional support. Provides sufficient independent practice. Incorporates systematic cumulative review. 	Incorporates 5–6 of the following principles of explicit instruction: <ul style="list-style-type: none"> Provides directions in simple, direct language. Models efficient strategies. Ensures sufficient background knowledge. Gradually fades instructional support. Provides sufficient independent practice. Incorporates systematic cumulative review.
Behavioral Support	Does not incorporate behavioral supports.	Incorporates 1 of the following behavioral supports: <ul style="list-style-type: none"> Strategies to develop perseverance with challenging academic content Methods to promote attention, engagement, and other aspects of executive function Behavioral principles that minimize noncompliant or disruptive behavior 	Incorporates 2 of the following behavioral supports: <ul style="list-style-type: none"> Strategies to develop perseverance with challenging academic content Methods to promote attention, engagement, and other aspects of executive function Behavioral principles that minimize noncompliant or disruptive behavior 	Incorporates all of the following behavioral supports: <ul style="list-style-type: none"> Strategies to develop perseverance with challenging academic content Methods to promote attention, engagement, and other aspects of executive function Behavioral principles that minimize noncompliant or disruptive behavior
Individualization: Although not rated, it is important to consider the ability to intensify the validated intervention.				

Rating Alignment for Jackson

Directions: Use the information about Jackson’s mastered skills and needs and the intervention descriptions on the following page to analyze which intervention is best aligned to Jackson’s needs.

Math Skills	Mastered	Needs
Basic facts	X	
Single-digit multiplication	X	
Multidigit multiplication		X
Multidigit division		X
Fraction magnitude understanding		X
Understanding place value	X	
Converting metric measurement units	X	
Addition/subtraction of decimals	X	
Comparing decimals	X	
Proportional reasoning		X
Word-problem solving		X
Fraction calculations		X

Intervention Descriptions



Which intervention would you select for Jackson and why?

Video Review Comprehensiveness

Directions: While watching the video, document the explicit instruction principles that you see in the video.

Component	Examples
Provides explanations in simple, direct language.	
Models efficient strategies (e.g., decoding unknown words) instead of expecting students to discover strategies on their own.	
Ensures that students have the necessary background knowledge and skills to succeed with these strategies.	
Gradually fades support for students' correct execution of these strategies.	
Provides practice so that students use the strategies to generate many correct responses.	
Incorporates systematic cumulative review.	

Assessing the Quality of Validated Intervention Platforms for Academics

*The Taxonomy of Intervention Intensity** was developed based on existing research to support educators in evaluating and building intervention intensity. Review the definitions of six dimensions and rate the extent to which the current validated intervention platform addresses each. Use the following to record your responses: 0—fails to address the dimension, or you are unsure; 1—minimally addresses; 2—moderately addresses; and 3—strongly addresses.

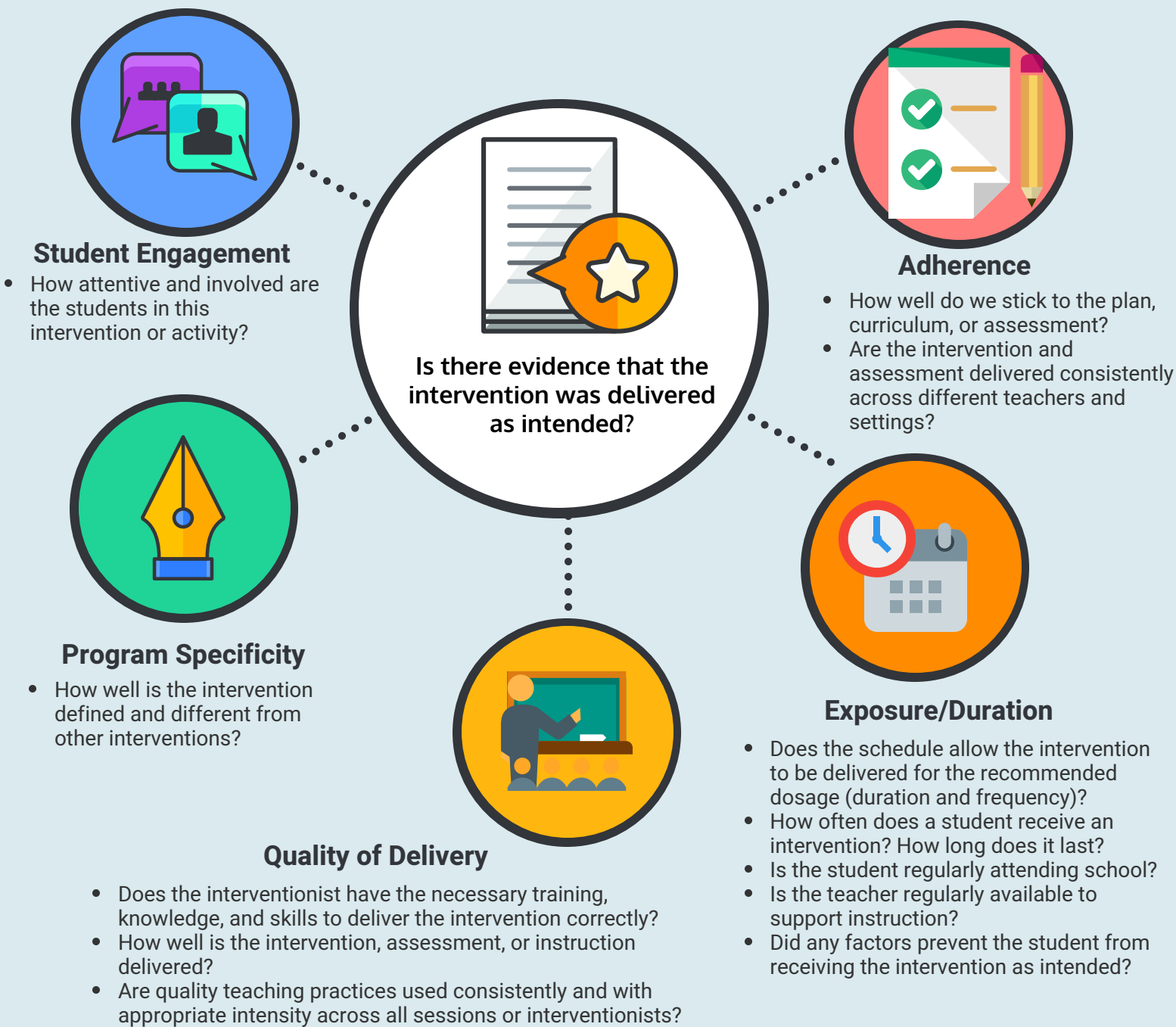
Dimension	Definition	Rating (0–3)	How could you intensify?
Strength	How well the program works for students with intensive intervention needs, expressed in terms of effect sizes. Effect sizes of above 0.25 indicate that an intervention has value in improving outcomes. Effect sizes of 0.35 to 0.40 are moderate; effect sizes of 0.50 or larger are strong (preferred).		
Dosage	The number of opportunities a student has to respond and receive corrective feedback. It refers to the size of the instructional group, the number of minutes each session lasts, and the number of sessions provided per week.		
Alignment	How well the program (a) addresses the target student’s full set of academic skill deficits, (b) does <i>not</i> address skills the target student has already mastered (extraneous skills for that student), and (c) incorporates a meaningful focus on grade-appropriate curricular standards.		
Attention to Transfer	The extent to which an intervention is designed to help students (a) transfer the skills they learn to other formats and contexts and (b) realize connections between mastered and related skills.		
Comprehensiveness	The number of explicit instruction principles that the intervention incorporates (e.g., providing explanations in simple, direct language; modeling efficient solution		

Dimension	Definition	Rating (0–3)	How could you intensify?
	strategies instead of expecting students to discover strategies on their own; ensuring that students have the necessary background knowledge and skills to succeed with these strategies; gradually fading support for students' correct execution of these strategies; providing practice so that students use the strategies to generate many correct responses; and incorporating systematic cumulative review).		
Behavioral Support	The extent to which the program incorporates (a) self-regulation and executive function components and (b) behavioral principles to minimize nonproductive behavior.		

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Considerations for Effective Implementation

5 Elements of Fidelity



Why fidelity? If we don't implement critical components of an intervention with consistency, we cannot link student outcomes to the instruction provided. Fidelity can help us to determine the effectiveness of an intervention, and identify if a student requires more intensive supports.

Source: Dane and Schneider (1998); Gresham, Gansle, and Noell (1993); O'Donnell (2008).

References

Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control? *Clinical Psychology Review, 18*, 23–45.

Gresham, F. M., Gansle, K. A., & Noell, G. H. (1993). Treatment integrity in applied behavior analysis with children. *Journal of Applied Behavior Analysis, 26*, 257–263.

O'Donnell, C. L. (2008). Defining, conceptualizing, and measuring fidelity of implementation and its relationship to outcomes in K–12 curriculum intervention research. *Review of Educational Research, 78*, 33–84.

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Intensification Strategy Checklist

Use these ideas, as well as your own, to intensify interventions. For more information about intensifying interventions, check out our website, www.intensiveintervention.org. *Before adapting or intensifying an intervention, always consider whether the current intervention program has been implemented with fidelity and for a sufficient amount of time.*

Strength

- Teams can increase the strength of an intervention by focusing on strategies and attention given to other dimensions of the [Taxonomy of Intervention Intensity](#).

Dosage

- Increase opportunities for practice and corrective feedback.
- Increase the length of intervention sessions.
- Increase the number of intervention sessions per week.
- Decrease the group size.
- Increase the total number of sessions.
- Decrease the heterogeneity of the groups (group students with similar performance levels).
- Consider an intervention setting with fewer distractions.
- Embed additional practice and feedback sessions throughout the day.
- _____

Alignment

- Increase instructional time for the target skill.*
- Supplement intervention with National Center on Intensive Intervention materials in [reading](#), [math](#), or [behavior](#).
- Focus on discrete skill instruction within the target skill.
- _____

Attention to Transfer

- Align instructional routines and language with core instruction and the environment.
- Preteach content.
- Embed guided practice on target skills within core instruction and other environments.
- Embed explicit opportunities in other settings to maintain skills acquired in the intervention.
- Explicitly teach connections.
- _____

Comprehensiveness or Elements of Explicit Instruction

- Use precise, simple language to teach key concepts or procedures.
- When introducing a concept, provide worked examples and show the steps in writing.
- Present a completed work example. Explain why a specific step is important and have the student complete that step and explain its significance.
- Model new concepts with examples, and “think aloud” as you work through steps.

- Use explicit instruction and modeling with repetition to teach a concept or demonstrate the steps in a process.
- Fade steps from examples so that students gradually assume responsibility for completing more and more steps.
- Once students can complete entire examples and explain their work, incorporate fluency-building activities to develop automaticity of skills.*
- Once students can fluently produce correct work, move to a new concept. Provide ongoing practice opportunities to facilitate skill maintenance.*
- Increase opportunities for student response and practice through unison choral responding, peer activities, and opportunities for the student to perform with adult feedback.*
- Break academic or behavior tasks into smaller chunks or steps.
- Provide concrete learning opportunities (including role play and use of manipulatives).
- Have students explain new concepts, in their own words, incorporating the important terms you have taught.
- Provide sufficient opportunities for independent practice with feedback.
- Provide immediate and explicit error correction when mistakes are made, and have the student repeat the correct response before moving on. Offer repeated opportunities to correctly practice the step.*
- Increase the frequency of error correction and corrective feedback across learning environments.*
- _____

Behavior, Engagement, and Motivation Support

- Use a timer for intermittent reinforcement of on-task, appropriate behavior.
- Provide differential reinforcement or change the schedule of reinforcement.
- Create a motivation plan based on what you know about the student that provides frequent behavior feedback.
- Use a report card for home communication.
- Add a social skills group.
- Combine or align academic and behavioral supports.
- Convene a functional behavior assessment team to determine the function of the behavior.
- Use group contingencies to promote on-task, appropriate behavior.
- Use peer support to model and encourage desired behavior.
- _____

Other

- Change to an interventionist with more expertise, such as a reading specialist, behavior specialist, social worker, or special education teacher, depending on the student's needs.
- Change the intervention to better meet the individual's needs.
- _____

*These areas also are important to consider for dosage.

Reflection

What am I most excited about?	What am I unsure of or want to learn more about?	What changes will I make as a result of what I learned today?

Related NCII Resources

Taxonomy of Intervention Intensity

(<https://intensiveintervention.org/taxonomy-intervention-intensity>)

This webpage includes archived webinars and tools to help educators learn more about the dimensions of the Taxonomy of Intervention Intensity and support the evaluation of validated intervention programs and the intensification of interventions as needed.

On this page you can find the following tools:

- [Taxonomy Overview Handout](#)
- [Intensification Strategy Checklist Handout](#)
- [Clarifying Questions to Create a Hypothesis to Guide Intervention Changes: Question Bank](#)

Academic Intervention Tools Chart

(<https://charts.intensiveintervention.org/chart/instructional-intervention-tools>)

The NCII Academic Intervention Tools Chart is designed to help educators become informed consumers of available academic interventions. This chart can help educators understand the strength of their intervention by reviewing the study quality and effects.

Behavioral Intervention Tools Chart (<https://charts.intensiveintervention.org/chart/behavioral-intervention-chart>)

The NCII Behavioral Intervention Tools Chart is designed to help educators become informed consumers of available behavioral interventions. This chart can help educators understand the strength of their intervention by reviewing the study quality and effects.

Strategies for Scheduling: How to Find Time to Intensify and Individualize Intervention

(<https://intensiveintervention.org/resource/strategies-scheduling-how-find-time-intensify-and-individualize-intervention>)

This resource includes strategies to support educators in considering how to intensify an intervention within the constraints of busy school schedules where it may be difficult to simply add more time.

Intensive Intervention Course Content: Features of Explicit Instruction

(<https://intensiveintervention.org/intensive-intervention-features-explicit-instruction>)

This four-part module series focuses on explicit instruction, the key component of the comprehensiveness dimension. The course content includes video lectures, presentation slides, activities and practice-based applications, video examples and nonexamples, coaching materials, and more.

Behavior Strategies to Support Intensifying Interventions

(<https://intensiveintervention.org/intervention-resources/behavior-strategies-support-intensifying-interventions>)

This series of strategies is intended to support teachers working with students who have primary academic deficits and challenging behaviors. Each strategy incorporates key terminology, an overview of the purpose, and all associated materials. The strategies also integrate approaches for intensification for students with more challenging behaviors.

Behavior Support for Intensive Intervention

(<https://intensiveintervention.org/intensive-intervention-behavior-course>)

This eight-part module series focuses on behavioral support for intensive intervention. Content from this course can help educators learn more about dimensions of behavior to consider and how to incorporate behavioral supports within an academic intervention. The course content includes video lectures, presentation slides, activities and practice-based applications, video examples and nonexamples, coaching materials, and more.

Mathematics Strategies to Support Intensifying Interventions

(<https://intensiveintervention.org/intervention-resources/mathematics-strategies-support-intensifying-interventions>)

This series of mathematics lessons and guidance documents is intended to support special education instructors, mathematics specialists, and others working with students who struggle with mathematics. These lessons and activities are organized around six mathematics skill areas that are aligned to college- and career-ready standards and incorporate several instructional principles that may help intensify and individualize mathematics instruction to assist teachers and interventionists working with students who have difficulty with mathematics.

Intensive Intervention in Mathematics Course Content

(<https://intensiveintervention.org/intensive-intervention-math-course>)

This eight-part module series focuses on designing and delivering intensive mathematics instruction. The course covers developing a scope and sequence for intensive intervention; assessment; evidence-based practices; instructional strategies; instructional delivery; whole-number content; rational-number content; and intensification. The course content includes video lectures, presentation slides, activities and practice-based applications, video examples and nonexamples, coaching materials, and more.

Fidelity and Implementation Resources

(<https://intensiveintervention.org/implementation-support/fidelity-resources>)

This webpage includes a series of resources focused on fidelity at the school, interventionist, and student levels. On this page you can find the student level Student Intervention Implementation Log (https://intensiveintervention.org/sites/default/files/DBI_Weekly_Log_508.pdf), which can be used to record daily and weekly documentation of the implementation of the intervention.