

CEC Initial Preparation Standards Addressed: Intensive Intervention in Mathematics Course Content

Part	Objective(s)	CEC Standards Addressed
Module 1: Developing a scope and sequence for intensive intervention		
<i>Part 1:</i> Why is mathematics intensive intervention important?	<ol style="list-style-type: none"> How earlier mathematics scores predict later mathematics scores The school and adulthood outcomes for students with learning difficulties in mathematics The importance of providing intensive intervention in mathematics 	1.1 Beginning special education professionals understand how language, culture, and family background influence the learning of individuals with exceptionalities 1.2 Beginning special education professionals use understanding of development and individual differences to respond to the needs of individuals with exceptionalities 5.5 Beginning special education professionals develop and implement a variety of education and transition plans for individuals with exceptionalities across a wide range of settings and different learning experiences in collaboration with individuals, families, and teams 6.1 Beginning special education professionals use professional ethical principles and professional practice standards to guide their practice 6.2 Beginning special education professionals understand how foundational knowledge and current issues influence professional practice
<i>Part 2:</i> What mathematical content do students need to master across kindergarten through eighth grade?	<ol style="list-style-type: none"> The foundational mathematical strands that students need to know across grade levels How these strands should inform the mathematical content within intensive intervention 	3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities 3.2 Beginning special education professionals understand and use general and specialized content knowledge for teaching across curricular content areas to individualize learning for individuals with exceptionalities 6.2 Beginning special education professionals understand how foundational knowledge and current issues influence professional practice
<i>Part 3:</i> How to identify mathematical content for intensive intervention and how to sequence intervention content?	<ol style="list-style-type: none"> How to identify mathematical content for intensive intervention How to sequence instructional content based on foundational mathematical strands 	3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities 3.2 Beginning special education professionals understand and use general and specialized content knowledge for teaching across curricular content areas to individualize learning for individuals with exceptionalities 6.2 Beginning special education professionals understand how foundational knowledge and current issues influence professional practice
Module 2: Mathematics Progress Monitoring and Determining Response		
<i>Part 1:</i> What are the different types of assessments used to monitor	<ol style="list-style-type: none"> The definition of a formative assessment and the difference between general 	1.2 Beginning special education professionals use understanding of development and individual differences to respond to the needs of individuals with exceptionalities 4.1 Beginning special education professionals select and use technically sound formal and informal assessments that minimize bias

student progress in mathematics within DBI?	<p>outcome measures and skill-specific measures</p> <ol style="list-style-type: none"> 2. The definition of a diagnostic assessment 3. The definition of a summative assessment 	4.3 Beginning special education professionals, in collaboration with colleagues and families, use multiple types of assessment information in making decisions about individuals with exceptionalities
<i>Part 2:</i> How do you administer progress monitoring measures with fidelity?	<ol style="list-style-type: none"> 1. How to administer and score early numeracy progress monitoring measures 2. How to administer and score computation progress monitoring measures 3. How to administer and score concepts and applications progress monitoring measures 	<p>4.1 Beginning special education professionals select and use technically sound formal and informal assessments that minimize bias</p> <p>5.2 Beginning special education professionals use technologies to support instructional assessment, planning, and delivery for individuals with exceptionalities</p>
<i>Part 3:</i> How do you interpret progress monitoring scores?	<ol style="list-style-type: none"> 1. How to graph progress monitoring scores 2. How to interpret progress monitoring scores 3. How assessment data is used within a DBI framework 	<p>1.2 Beginning special education professionals use understanding of development and individual differences to respond to the needs of individuals with exceptionalities</p> <p>4.1 Beginning special education professionals select and use technically sound formal and informal assessments that minimize bias</p> <p>4.2 Beginning special education professionals use knowledge of measurement principles and practice to interpret assessments results and guide educational decisions for individuals with exceptionalities</p> <p>4.3 Beginning special education professionals, in collaboration with colleagues and families, use multiple types of assessment information in making decisions about individuals with exceptionalities</p> <p>5.2 Beginning special education professionals use technologies to support instructional assessment, planning, and delivery for individuals with exceptionalities</p>
Module 3: Selecting and Evaluating Evidence-Based Practices in Mathematics		
<i>Part 1:</i> What are the forms of evidence-based practices in intensive intervention?	<ol style="list-style-type: none"> 1. The definition of the term “evidence-based practice” 2. The differences among evidence-based practices, evidence-based intervention, evidence-based strategies, and promising practices 	<p>1.2 Beginning special education professionals use understanding of development and individual differences to respond to the needs of individuals with exceptionalities</p> <p>3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities</p>
<i>Part 2:</i> Where do you locate evidence-based practices?	<ol style="list-style-type: none"> 1. Several methods for locating evidence-based practices 2. How to understand what constitutes “evidence” 	<p>3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities</p> <p>6.1 Beginning special education professionals understand how foundational knowledge and current issues influence professional practice</p>

<p><i>Part 3:</i> How do you determine the instructional platform for intensive intervention?</p>	<p>1. How to develop the instructional platform for intensive intervention</p>	<p>1.2 Beginning special education professionals use understanding of development and individual differences to respond to the needs of individuals with exceptionalities 6.2 Beginning special education professionals understand how foundational knowledge and current issues influence professional practice</p>
<p>Module 4: Intensive Mathematics Intervention: Instructional Delivery</p>		
<p><i>Part 1:</i> How do you use explicit instruction within intensive intervention?</p>	<p>1. How to include modeling and practice within delivery of intensive intervention 2. Which supporting practices are necessary within explicit instruction</p>	<p>2.1 Beginning special education professionals, through collaboration with general educators and other colleagues, create safe, inclusive, culturally response learning environments to engage individuals with exceptionalities in meaningful learning activities and social interactions 3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities 4.4 Beginning special education professionals engage individuals with exceptionalities to work toward quality learning and performance and provide feedback to guide them 5.1 Beginning special education professionals consider individual abilities, interests, learning environments, and cultural and linguistic factors in the selection, development, and adaptation of learning experiences for individual with exceptionalities 5.6 Beginning special education professionals teach to mastery and promote generalization of learning</p>
<p><i>Part 2:</i> How should multiple representations be used within intensive intervention?</p>	<p>1. What is meant by “concrete” 2. What is meant by “representational” 3. What is meant by “abstract”</p>	<p>3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities 5.1 Beginning special education professionals consider individual abilities, interests, learning environments, and cultural and linguistic factors in the selection, development, and adaptation of learning experiences for individual with exceptionalities 5.6 Beginning special education professionals teach to mastery and promote generalization of learning</p>
<p><i>Part 3:</i> How do you attend to language within intensive intervention?</p>	<p>1. Why it’s important to be precise with mathematical language 2. Informal vocabulary terms that teachers often use and the formal vocabulary that could be used</p>	<p>1.1 Beginning special education professionals understand how language, culture, and family background influence the learning of individuals with exceptionalities 5.1 Beginning special education professionals consider individual abilities, interests, learning environments, and cultural and linguistic factors in the selection, development, and adaptation of learning experiences for individual with exceptionalities 5.4 Beginning special education professionals use strategies to enhance language development and communication skills of individuals with exceptionalities 5.6 Beginning special education professionals teach to mastery and promote generalization of learning</p>

Module 5:		
Intensive Mathematics Intervention: Instructional Strategies		
<i>Part 1:</i> How do you build fact fluency within intensive intervention?	1. How to build fluency with the operations of addition, subtraction, multiplication, and division	3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities 5.6 Beginning special education professionals teach to mastery and promote generalization of learning
<i>Part 2:</i> How do you incorporate effective problem-solving strategies within intensive intervention?	1. Ineffective problem-solving strategies 2. Different types of <i>attack strategies</i> 3. Additive and multiplicative <i>schemas</i>	3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities 5.6 Beginning special education professionals teach to mastery and promote generalization of learning 5.7 Beginning special education professionals teach cross-disciplinary knowledge and skills such as critical thinking and problem solving to individuals with exceptionalities
<i>Part 3:</i> How do you incorporate a motivational component within intensive intervention?	1. Different methods for incorporating a motivational component within intensive intervention	2.2 Beginning special education professionals use motivational and instructional interventions to teach individuals with exceptionalities how to adapt to different environments 5.1 Beginning special education professionals consider individual abilities, interests, learning environments, and cultural and linguistic factors in the selection, development, and adaptation of learning experiences for individual with exceptionalities
Module 6:		
Whole-Number Content for Intensive Intervention		
<i>Part 1:</i> What whole-number core concepts should be emphasized in intensive intervention?	1. Core concepts of addition, subtraction, multiplication, and division	3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities 3.2 Beginning special education professionals understand and use general and specialized content knowledge for teaching across curricular content areas to individualize learning for individuals with exceptionalities 5.1 Beginning special education professionals consider individual abilities, interests, learning environments, and cultural and linguistic factors in the selection, development, and adaptation of learning experiences for individual with exceptionalities 5.6 Beginning special education professionals teach to mastery and promote generalization of learning 5.7 Beginning special education professionals teach cross-disciplinary knowledge and skills such as critical thinking and problem solving to individuals with exceptionalities

<p><i>Part 2: What whole-number procedures should be emphasized in intensive intervention?</i></p>	<ol style="list-style-type: none"> 1. Place value and regrouping concepts related to procedures 2. Multiple algorithms for addition, subtraction, multiplication, and division of whole numbers 	<p>3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities</p> <p>3.2 Beginning special education professionals understand and use general and specialized content knowledge for teaching across curricular content areas to individualize learning for individuals with exceptionalities</p> <p>5.1 Beginning special education professionals consider individual abilities, interests, learning environments, and cultural and linguistic factors in the selection, development, and adaptation of learning experiences for individual with exceptionalities</p> <p>5.6 Beginning special education professionals teach to mastery and promote generalization of learning</p>
<p><i>Part 3: What does DBI look like with intensive interventions that focus on conceptual and procedural understanding of whole numbers?</i></p>	<ol style="list-style-type: none"> 1. How concepts and procedures are practiced within intensive intervention that utilizes evidence-based practices 	<p>3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities</p> <p>3.2 Beginning special education professionals understand and use general and specialized content knowledge for teaching across curricular content areas to individualize learning for individuals with exceptionalities</p> <p>5.6 Beginning special education professionals teach to mastery and promote generalization of learning</p> <p>6.2 Beginning special education professionals understand how foundational knowledge and current issues influence professional practice</p>
<p>Module 7: Rational-Number Content for Intensive Intervention</p>		
<p><i>Part 1: What rational-number core concepts should be emphasized in intensive intervention?</i></p>	<ol style="list-style-type: none"> 1. Core concepts of fractions with the length, area, and set models 2. Core concepts of decimals 	<p>3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities</p> <p>3.2 Beginning special education professionals understand and use general and specialized content knowledge for teaching across curricular content areas to individualize learning for individuals with exceptionalities</p> <p>5.1 Beginning special education professionals consider individual abilities, interests, learning environments, and cultural and linguistic factors in the selection, development, and adaptation of learning experiences for individual with exceptionalities</p> <p>5.6 Beginning special education professionals teach to mastery and promote generalization of learning</p> <p>5.7 Beginning special education professionals teach cross-disciplinary knowledge and skills such as critical thinking and problem solving to individuals with exceptionalities</p>

<p><i>Part 2:</i> What rational-number procedures should be emphasized in intensive intervention?</p>	<ol style="list-style-type: none"> 1. Computational models for addition, subtraction, multiplication, and division of fractions 2. Computational models for addition, subtraction, multiplication, and division of decimals 	<p>3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities</p> <p>3.2 Beginning special education professionals understand and use general and specialized content knowledge for teaching across curricular content areas to individualize learning for individuals with exceptionalities</p> <p>5.1 Beginning special education professionals consider individual abilities, interests, learning environments, and cultural and linguistic factors in the selection, development, and adaptation of learning experiences for individual with exceptionalities</p> <p>5.6 Beginning special education professionals teach to mastery and promote generalization of learning</p>
<p><i>Part 3:</i> What does DBI look like with intensive interventions that focus on conceptual and procedural understanding of rational numbers?</p>	<ol style="list-style-type: none"> 1. How concepts and procedures are practiced within intensive intervention that utilizes evidence-based practices 	<p>3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities</p> <p>3.2 Beginning special education professionals understand and use general and specialized content knowledge for teaching across curricular content areas to individualize learning for individuals with exceptionalities</p> <p>5.6 Beginning special education professionals teach to mastery and promote generalization of learning</p> <p>6.2 Beginning special education professionals understand how foundational knowledge and current issues influence professional practice</p>
<p>Module 8: DBI for Intensive Mathematics Intervention</p>		
<p><i>Part 1:</i> How do you implement intensive mathematics interventions with fidelity?</p>	<ol style="list-style-type: none"> 1. About different methods for measuring fidelity 2. How to identify essential components that must be included within intensive intervention 	<p>5.6 Beginning special education professionals teach to mastery and promote generalization of learning</p> <p>5.7 Beginning special education professionals teach cross-disciplinary knowledge and skills such as critical thinking and problem solving to individuals with exceptionalities</p>
<p><i>Part 2:</i> How do you make adaptations within DBI?</p>	<ol style="list-style-type: none"> 1. The taxonomy of intervention adaptations 2. Common adaptations to use within DBI when response is not adequate 	<p>1.2 Beginning special education professionals use understanding of development and individual differences to respond to the needs of individuals with exceptionalities</p> <p>3.3 Beginning special education professionals modify general and specialized curricula to make them accessible to individuals with exceptionalities</p> <p>5.6 Beginning special education professionals teach to mastery and promote generalization of learning</p> <p>6.2 Beginning special education professionals understand how foundational knowledge and current issues influence professional practice</p>
<p><i>Part 3:</i> How does all of this come together within a DBI framework?</p>	<ol style="list-style-type: none"> 1. How the entire DBI process works 	<p>1.2 Beginning special education professionals use understanding of development and individual differences to respond to the needs of individuals with exceptionalities</p>

		<p>2.1 Beginning special education professionals, through collaboration with general educators and other colleagues, create safe, inclusive, culturally response learning environments to engage</p> <p>5.6 Beginning special education professionals teach to mastery and promote generalization of learning individuals with exceptionalities in meaningful learning activities and social interactions</p> <p>3.1 Beginning special education professionals understand the central concepts, structures of the discipline, and tools of inquiry of the content areas they teach, and can organize this knowledge, integrate cross-disciplinary skills, and develop meaningful learning progressions for individuals with exceptionalities</p> <p>4.3 Beginning special education professionals, in collaboration with colleagues and families, use multiple types of assessment information in making decisions about individuals with exceptionalities</p> <p>5.5 Beginning special education professionals develop and implement a variety of education and transition plans for individuals with exceptionalities across a wide range of settings and different learning experiences in collaboration with individuals, families, and teams</p> <p>6.2 Beginning special education professionals understand how foundational knowledge and current issues influence professional practice</p> <p>7.3 Beginning special education professionals use collaboration to promote the well being of individuals with exceptionalities across a wide range of settings and collaborators</p>
<p>By participating in this course in entirety, the following standards will be addressed:</p>		
<p>6.1 Beginning special education professionals use professional ethical principles and professional practice standards to guide their practice</p> <p>6.2 Beginning special education professionals understand how foundational knowledge and current issues influence professional practice</p> <p>6.3 Beginning special education professionals understand that diversity is a part of families, culture, and schools, and that complex human issues can interact with the delivery of special education services</p> <p>6.4 Beginning special education professionals understand the significance of lifelong learning and participate in professional activities and learning communities</p> <p>6.6 Beginning special education professionals provide guidance and direction to paraeducators, tutors, and volunteers</p> <p>7.1 Beginning special education professionals use the theory and elements of effective collaboration</p> <p>7.2 Beginning special education professionals serve as a collaborative resource to colleagues</p> <p>7.3 Beginning special education professionals use collaboration to promote the well being of individuals with exceptionalities across a wide range of settings and collaborators</p>		