

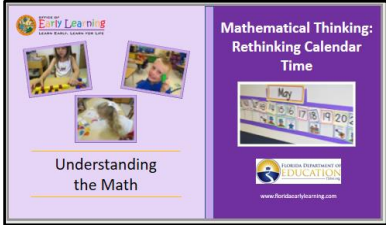
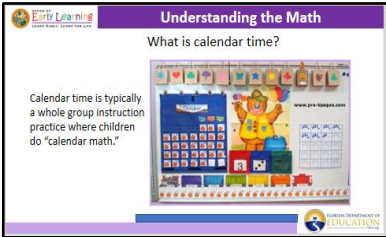
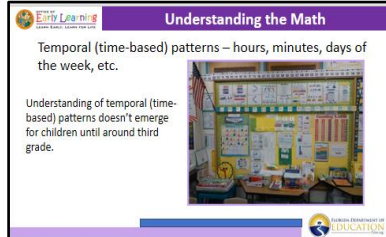


Professional Learning Module
Mathematical Thinking: Rethinking Calendar Time

Pacing Guide
 Understanding the Math

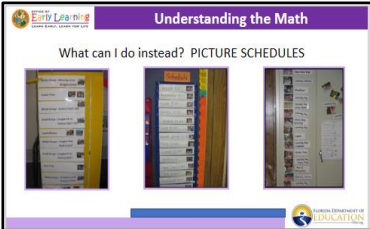
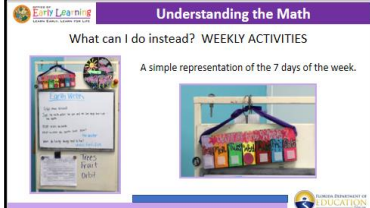
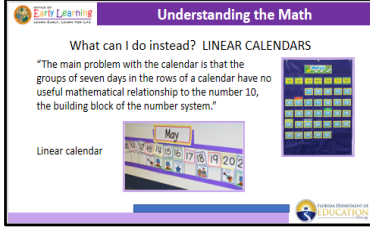
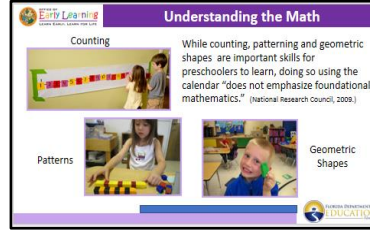
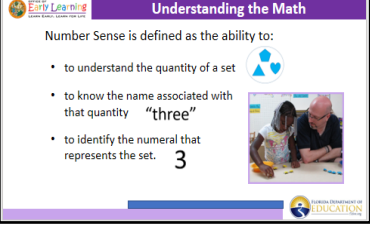
Getting Started:

1. Administer the Knowledge Check
2. Review the following materials:
 - a. Overview of Mathematical Thinking: Rethinking Calendar Time
 - b. PowerPoint Note Pages
 - c. Instructional Resources: Rethinking Calendar Time
 - d. Content Support Documents: The Big Ideas of Counting and the Big Ideas of Patterns
 - e. Content Resources: *Calendar Time in the Preschool and Primary Classrooms: Questioning the Curriculum*

SLIDE	KEY POINTS	ACTION
<p>1.</p> 	<p>Mathematical Thinking: Rethinking Calendar Time</p> <p>The purpose of this PowerPoint Presentation is to understand the math in the calendar time activity and offer more effective instructional strategies to address those math concepts</p>	<p>Review Document - Overview of Mathematical Thinking: Rethinking Calendar Time</p>
<p>2.</p> 	<p>Understanding the Math</p> <p>What is Calendar Time?</p>	<p>Guided Discussion: What are the math activities instructors address during calendar time?</p>
<p>3.</p> 	<p>Understanding the Math</p> <p>Temporal (time-based) patterns include understanding minutes, hours, days of the week, etc.</p>	<p>Review Resource Article: <i>Calendar Time in the Preschool and Primary Classrooms: Questioning the Curriculum</i></p>

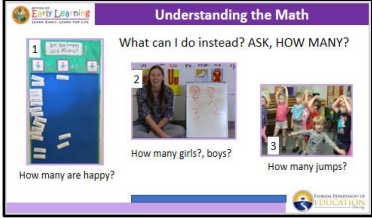
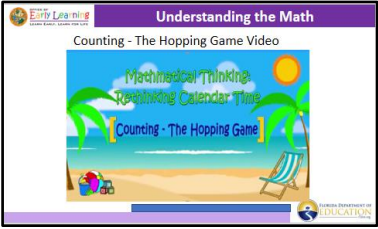
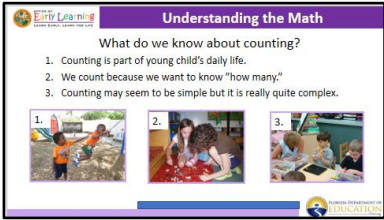
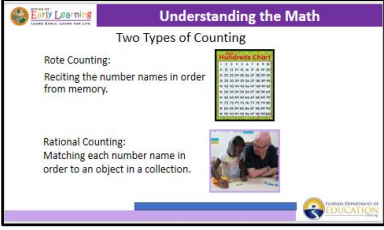
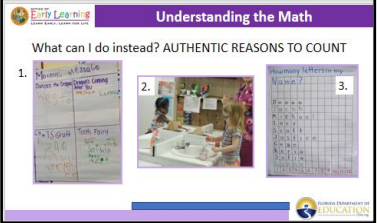
Pacing Guide

Understanding the Math

SLIDE	KEY POINTS	ACTION
<p>4.</p> 	<p>What can I do instead?</p> <p>Picture schedules displayed at the child’s level will reinforce concepts like later, before, and after during daily activities.</p>	<p>Guided Discussion: Why is it important to display the picture schedules at eye-level?</p>
<p>5.</p> 	<p>What can I do instead?</p> <p>A simple representation of the 7 days of the week will help children “see” the number of days that make up a week.</p>	<p>Guided Discussion: What are other ways to help children understand the days of the week?</p>
<p>6.</p> 	<p>What can I do instead?</p> <p>A linear calendar is a better representation of the passing of time and looks very similar to a number line.</p>	<p>Review PowerPoint Notes to understand how to construct a linear calendar.</p>
<p>7.</p> 	<p>Understanding the Math</p> <p>While counting, patterning and geometric are important skills for preschoolers to learn, doing so using the calendar “does not emphasize foundational mathematics” (National Research Council, 2009, p. 241</p>	<p>Note: Each of these mathematical concepts will be discussed in the presentation.</p> <p>Review Instructional Resource: Rethinking Calendar Time</p>
<p>8.</p> 	<p>Understanding the Math</p> <p>Number sense is the ability to understand the quantity of a set, name the word associated with that quantity and to identify the numeral that represents the set.</p>	<p>Discuss the number sense concepts to be sure everyone understands “quantity.”</p>

Pacing Guide

Understanding the Math

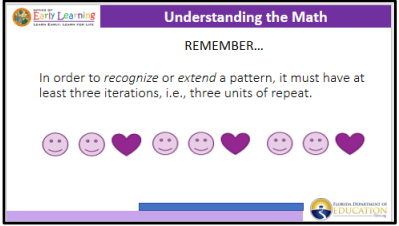
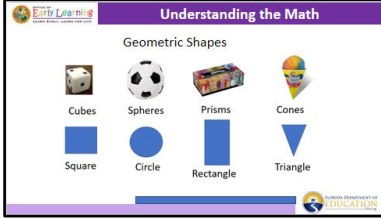

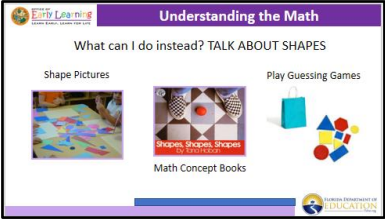
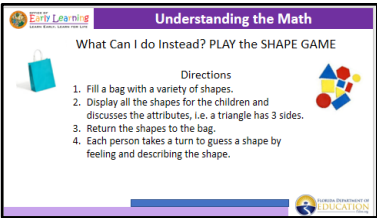
SLIDE	KEY POINTS	ACTION
<p>9.</p> 	<p>What can I do instead?</p> <p>Ask, “how many?” while counting throughout the day.</p>	<p>Discuss the three examples on the slide. Do you have other ideas?</p>
<p>10.</p> 	<p>Video: Counting – The Hopping Game</p>	<p>Guided Discussion: As you view the video note the <i>number sense</i> concepts the children are learning during the hopping game.</p>
<p>11.</p> 	<p>Understanding the Math</p> <p>What do we know about counting?</p>	<p>Discuss each of the pictures on the slide and how it relates to counting.</p>
<p>12.</p> 	<p>Understanding the Math</p> <p>Two types of counting:</p> <ul style="list-style-type: none"> • Rote Counting • Rational Counting 	<p>Guided Discussion: What are the differences between rote and rational counting? Name a few activities for what you are currently doing to address each type of counting.</p>
<p>13.</p> 	<p>What can I do instead?</p> <p>Provide children with authentic reasons to count throughout the day.</p>	<p>Discuss other ways to help children do rote and rational counting.</p> <p>Review Content Support Documents: The Big Ideas of Counting</p>

Pacing Guide
Understanding the Math

SLIDE	KEY POINTS	ACTION
<p>14.</p> <p>The slide features a purple header with the 'Early Learning' logo and the title 'Understanding the Math'. Below the header, the text reads 'Patterns All Around!'. There are five numbered images: 1. A fence with repeating white and black sections; 2. A row of colorful blocks; 3. A group of children; 4. A grid of green dots forming a staircase pattern; 5. A row of colorful blocks.</p>	<p>Understanding the Math Patterns all around!</p>	<p>Guided Discussion: What was one thing about patterns that surprised you?</p>
<p>15.</p> <p>The slide features a purple header with the 'Early Learning' logo and the title 'Understanding the Math'. Below the header, the text reads 'Patterns and Seriation: Learning from an Expert Video'. The main image shows a beach scene with palm trees and a beach chair. Text on the image includes 'Mathematical Thinking: Rethinking Calendar Time' and 'Patterns and Seriation: Learning from an Expert'.</p>	<p>Patterns and Seriation: Learning from and Expert Video</p>	<p>Guided Question: Why is it important for children to understand patterns?</p>
<p>16.</p> <p>The slide features a purple header with the 'Early Learning' logo and the title 'Understanding the Math'. Below the header, the text reads 'What can I do instead? EXPERIENCE PATTERNS'. There are three images: 'Music, Songs and Fingerplays' showing children playing instruments; 'Math Concept Books' showing a child reading; and 'Patterns in Nature' showing a child observing nature.</p>	<p>What can I do instead? Provide multiple opportunities for children to “feel” and understand what a pattern is.</p>	<p>Discuss other ways an instructor can help children understand about patterns.</p>
<p>17.</p> <p>The slide features a purple header with the 'Early Learning' logo and the title 'Understanding the Math'. Below the header, the text reads 'What can I do instead? PRACTICE PATTERNS'. There are three images: 'Recognize a Pattern' showing a child with blocks; 'Copy a Pattern' showing a child copying a pattern; and 'Complete or Extend a Pattern' showing a child completing a pattern.</p>	<p>What can I do instead? Children need to recognize and copy patterns before being ask to complete or extend a pattern.</p>	<p>Discuss what is meant by completing or extending a pattern.</p>
<p>18.</p> <p>The slide features a purple header with the 'Early Learning' logo and the title 'Understanding the Math'. Below the header, the text reads 'Sequence of Patterns – Video'. The main image shows a beach scene with palm trees and a beach chair. Text on the image includes 'Mathematical Thinking: Rethinking Calendar Time' and 'The Sequence of Learning Patterns'.</p>	<p>The Sequence of Patterns Video</p>	<p>Guided Discussion: List the learning sequence for patterns as each are discussed in the video.</p>

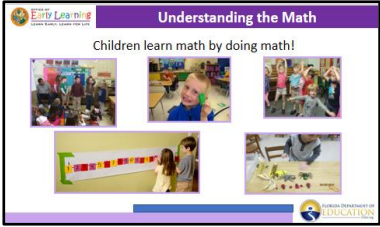
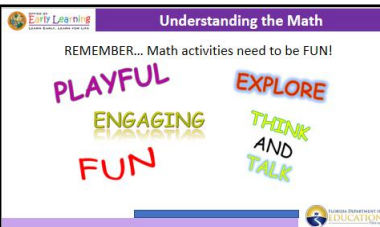
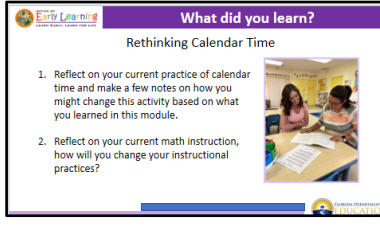
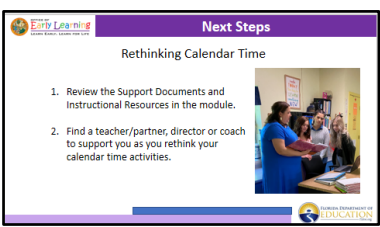
Pacing Guide

Understanding the Math

SLIDE	KEY POINTS	ACTION
<p>19.</p> 	<p>Understanding the Math</p> <p>Remember, in order to recognize or extend a pattern, it must have at least three iterations, i.e., three units of repeat.</p>	<p>Activity: Using a variety of materials, practice making several patterns with three units of repeat.</p> <p>Review Content Support Documents: Big Ideas of Patterns</p>
<p>20.</p> 	<p>Understanding the Math</p> <p>Children need to have a strong foundational awareness that there is a close connection between the shapes we see on paper and the shapes of objects in the world.</p>	<p>Discuss strategies instructors currently use when addressing geometric shapes.</p>
<p>21.</p> 	<p>What can I do instead?</p> <p>Provide a variety of activities for children to “experience” shapes.</p>	<p>Discuss ways instructors can help children understand 2-and 3-Dimensional shapes.</p>
<p>22.</p> 	<p>What can I do instead?</p> <p>Talk with children about shapes and what makes the shape “that” shape.</p>	<p>Guided Discussion: What are ways that instructors can talk about shapes with children?</p>
<p>23.</p> 	<p>What can I do instead?</p> <p>Play shape guessing games with children.</p>	<p>Activity: Gather the materials for the Shape Game and practice playing it together.</p>

Pacing Guide

Understanding the Math

SLIDE	KEY POINTS	ACTION
<p>24.</p> 	<p>Understanding the Math</p> <p>It's important to remember that children learn math by doing math!</p>	<p>Discuss the different ways math can be addressed throughout the day other than during whole or small group instruction.</p>
<p>25.</p> 	<p>Understanding the Math</p> <p>Math should be playful, engaging, and FUN for children.</p>	<p>Discuss why math should be fun!</p>
<p>26.</p> 	<p>What did you learn?</p> <p>Rethinking Calendar Time</p>	<p>Discuss the reflection questions.</p>
<p>27.</p> 	<p>Next Steps</p> <p>What will you do now?</p>	<p>Discuss next step in rethinking calendar time in the preschool classroom.</p>
<p>28.</p> 