

# Kindergarten Mathematics

## Prince William County Pacing Guide

### 2019-2020

Teacher Focus Groups have assigned a given number of days to each unit based on their experiences and knowledge of the curriculum. It is critical that teachers stay as close as possible to the pacing guidelines to ensure that all of the Standards of Learning have been taught by the end of the school-year, and that, as children move within the Division, their mathematics instruction remains coherent. Ongoing review should occur throughout the year.

Prince William County Regulation 602-1 describes the organization of the instructional day. **Mathematics is allotted 70 minutes in Kindergarten.** This should include an uninterrupted 55-minute block of time for the lesson and an additional 15-minute block to be used for classroom routines, number talks, and/or other selected review activities. These types of activities are a critical element of mathematics instruction that provide essential practice and maintenance of key concepts and skills.

Teachers may find the full wording of the objectives, along with the essential knowledge and skills to be learned, in the Unit Guides. The Unit Guides created by the Teacher Focus Groups provide suggestions for learning experiences, assessments, and resources. These documents are available on the Mathematics Staff Communities site for each grade level.

**Classroom Routines** should be an integral part of the development of mathematics understanding. Each day should include a brief (10-15 minutes), deliberate, and carefully planned time for review of key concepts and skills. It is not expected that all skills are addressed every day; each teacher should determine which skills and at what level may be appropriate on a given day. Examples may include activities with the calendar, weather graph, attendance, counting jar, estimation jar, counting, subitizing, patterns, coins, etc. These types of activities are a critical element of mathematics instruction that provide essential practice and maintenance of key concepts and skills.

**Assessment Opportunities** are provided throughout each unit. Each unit includes an End of Unit Assessment on the unit's Focus Standards. All assessments are intended to be used to determine student growth and guide ongoing instruction. Assessment scoring guides are designed to meet the criteria in **assessment Regulation 661-1**.

As indicated on most assessments, all items are administered one-on-one. Assessment may be copied, one per student, and used as a teacher recording sheet. Students should have access to counters, number charts, other manipulatives, as needed/indicated. The **assessments are not intended to be administered all at once at the end of the unit** – there is a place for the student's name on each page; items may be assessed, as appropriate, **throughout the unit**, including during centers, etc. Once a student shows mastery of a concept at the level indicated, it is not necessary to re-assess at that level on subsequent assessments except for the purpose of ensuring enduring understanding.

**Unit 1: Introduction and Exploration**  
**August 26 – September 20, 2019 (18 days)**

Focus Topics	Standards of Learning
<p><b><u>NOTE: Number Sense and Computation concepts should be reviewed throughout the year through Classroom Routines</u></b></p> <ul style="list-style-type: none"> <li>• Attendance and Calendar Routines               <ul style="list-style-type: none"> <li>• Tell how many</li> <li>• Read a calendar</li> <li>• Compare objects</li> </ul> </li> <li>• Count forward from <b><u>1 to 20</u></b></li> <li>• Coin Recognition: Penny</li> <li>• Gathering, counting, analyzing data (ex. Today’s Question)</li> <li>• Weather Graph</li> <li>• Sorting (colors, shapes, same/different)</li> </ul>	<p>K.1a, K.8, K.9</p> <p>K.3a</p> <p>K.7</p> <p>K.1a, K.11ab</p> <p>K.9, K.11a</p> <p>K.12</p>
<p><b>Unit 1 Ongoing Assessment (checklists, etc.)</b></p>	<p><b>K.3a, K.7, K.8, K.11a, K.12</b></p>
<p><b>Objectives Completed</b></p>	<p><b>None</b></p>

**Unit 2: Number Sense 1**  
**September 23 – October 25, 2019 (24 days)**

Focus Topics	Standards of Learning
<p>Numbers <b>1-5</b></p> <ul style="list-style-type: none"> <li>• Count Sets               <ul style="list-style-type: none"> <li>○ Counting with one-to-one correspondence (ex. Counting Jar)</li> <li>○ Tell how many</li> <li>○ Read</li> <li>○ Write</li> <li>○ Represent</li> </ul> </li>   <li>• Compare and Order Sets <b>up to 5</b></li>   <li>• Count <b>1 – 20</b> orally</li>   <li>• Introduce “<i>Number after</i>” / “<i>One more</i>” orally <b>to 5</b> <i>without</i> counting all</li> </ul> <p>Money:</p> <ul style="list-style-type: none"> <li>• Coin Recognition: Nickel</li> <li>• Recognize attributes of a penny and a nickel</li> <li>• Identify number of pennies equivalent to a nickel</li> </ul>	<p>K.1a</p> <p>K.1b</p> <p>K.2ab</p> <p>K.3a</p> <p>K.3c</p> <p>K.7</p>
<b>Unit 2 Ongoing Assessment (checklists, etc.)</b>	<b>K.1ab, K.2ab, K.3ac, K.7</b>
<b>Objectives Completed</b>	<b>None</b>

**Unit 3: 2D Geometry and Exploring Measurement**  
**October 28 – November 26, 2019 (19 days)**

Focus Topics	Standards of Learning
<p>Shapes (circle, square, rectangle, triangle)</p> <ul style="list-style-type: none"> <li>• Identify</li> <li>• Describe</li> <li>• Compare</li> </ul> <p>Relative location of objects/Positional words (above, below, next to)</p> <p>Sorting/Classifying Exploring Measurement</p> <ul style="list-style-type: none"> <li>• Length (shorter, longer)</li> <li>• Weight (lighter, heavier)</li> <li>• Height (shorter, taller)</li> </ul>	<p>K.10a</p> <p>K.10b</p> <p>K.10c</p> <p>K.9, K.12</p>
<b>Unit 3 Ongoing Assessment (checklists, etc.)</b>	<b>K.10abc, K.12</b>
<b>Objectives Completed</b>	<b>K.10abc</b>

**Unit 4: Number Sense 2**  
**December 2 – December 20, 2019 (15 days)**

<b>Focus Topics</b>	<b>Standards of Learning</b>
<p>Numbers <b><u>0-10</u></b></p> <ul style="list-style-type: none"> <li>• Count Sets               <ul style="list-style-type: none"> <li>○ Introduce <b><u>0</u></b></li> <li>○ Counting with one-to-one correspondence (ex. Counting Jar)</li> <li>○ Tell how many</li> <li>○ Read</li> <li>○ Write</li> <li>○ Represent</li> </ul> </li> <li>• Compare and Order Sets <b><u>up to 10</u></b></li> <li>• Count forward orally by ones <b><u>to 50</u></b></li> <li>• Count forward by tens with objects <b><u>to 50</u></b></li> <li>• Introduce: Count backward <b><u>from 5</u></b></li> </ul> <p>Review “<i>Number after</i>”/“<i>One more</i>” orally <b><u>to 50</u></b> without counting all</p> <p>Introduce “<i>Number before</i>” / “<i>One less</i>” orally <b><u>from 5</u></b> without counting all</p> <p>Fluency of Part-Whole Relationships – Numbers <b><u>to 5</u></b></p> <p>Money:</p> <ul style="list-style-type: none"> <li>• Review               <ul style="list-style-type: none"> <li>○ attributes of a penny and a nickel</li> <li>○ number of pennies in a nickel</li> </ul> </li> <li>• Coin Recognition: Dime</li> <li>• Recognize attributes of a dime</li> <li>• Identify number of pennies equivalent to a dime</li> </ul>	<p>K.1a</p> <p>K.1b</p> <p>K.2ab</p> <p>K.3a</p> <p>K.3d</p> <p>K.3b</p> <p>K.3c</p> <p>K.4a</p> <p>K.7</p>
<b>Unit 4 Ongoing Assessment (checklists, etc.)</b>	<b>K.1ab, K.2ab, K.3abcd, K.4a, K.7</b>
<b>Objectives Completed</b>	<b>None</b>

**Unit 5: Patterns**  
**January 6 – January 24, 2020 (14 days)**

<b>Focus Topics</b>	<b>Standards of Learning</b>
Repeating Patterns <ul style="list-style-type: none"> <li>• Sort and Classify Objects</li>   <li>• Identify</li> <li>• Describe</li> <li>• Extend</li> <li>• Create</li> <li>• Transfer*</li> </ul> <div style="margin-left: 40px;">           } Rhythm            } Shapes            } Colors            } Pictures         </div> <p style="margin-left: 40px;">(*e.g. <i>snap, snap, clap</i> is the same as <i>blue, blue, red</i> is the same as <i>AAB</i>)</p> <ul style="list-style-type: none"> <li>• Identify “core” (unit)</li> </ul>	K.12  K.13
<b>Unit 5 Ongoing Assessment (checklists, etc.)</b>	<b>K.12, K.13</b>
<b>Objectives Completed</b>	<b>K.12, K.13</b>

**Unit 6: Number Sense 3**  
**January 28 – February 21, 2020 (18 days)**

Focus Topics	Standards of Learning									
<p>Numbers <b>0-15</b></p> <ul style="list-style-type: none"> <li>• Count Sets               <ul style="list-style-type: none"> <li>○ Counting with one-to-one correspondence (ex. Counting Jar)</li> <li>○ Tell how many</li> <li>○ Read</li> <li>○ Write</li> <li>○ Represent</li> </ul> </li> <li>• Review: Compare and Order Sets <b>up to 10</b></li> <li>• Count forward orally by ones <b>to 100</b></li> <li>• Count forward by tens with objects <b>to 100</b></li> <li>• Count backward <b>from 10</b></li> </ul> <p>Review: “Number after” / “One more” orally <b>to 70</b> without counting all            Review: “Number before” / “One less” orally <b>from 10</b> without counting all</p> <p>Fluency of Part-Whole Relationships Numbers <b>to 5</b>; Describe Part-Whole Relationships Numbers <b>to 10</b></p> <p>Single-step Story Problems</p> <table border="0" style="margin-left: 20px;"> <tr> <td style="vertical-align: middle;"> <ul style="list-style-type: none"> <li>• Sums <b>to 5</b></li> <li>• Differences <b>within 5</b></li> <li>• Model</li> <li>• Solve</li> </ul> </td> <td style="font-size: 3em; vertical-align: middle; padding: 0 10px;">}</td> <td style="vertical-align: middle;">           Using           <ul style="list-style-type: none"> <li>• Concrete Objects</li> <li>• Number Line</li> <li>• Combining</li> <li>• Taking Away</li> <li>• More/Less</li> </ul>           Include Counting <u>On</u>)         </td> </tr> </table> <p>Introduce: <i>Join</i> and <i>Separate</i> Problem types</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left; padding: 2px;">KINDERGARTEN: COMMON ADDITION AND SUBTRACTION PROBLEM TYPES</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;"><b>Join (Result Unknown)</b></td> <td style="padding: 2px;">Sue had 4 pennies. Josh gave her 2 more. How many pennies does Sue have altogether?</td> </tr> <tr> <td style="padding: 2px;"><b>Separate (Result Unknown)</b></td> <td style="padding: 2px;">Sue had 8 pennies. She gave 5 pennies to Josh. How many pennies does Sue have now?</td> </tr> </tbody> </table> <p>Money:</p> <ul style="list-style-type: none"> <li>• Coin Identification: Quarter</li> <li>• Review: attributes of a penny, a nickel, a dime</li> <li>• Review: number of pennies equivalent to a nickel, a dime</li> </ul>	<ul style="list-style-type: none"> <li>• Sums <b>to 5</b></li> <li>• Differences <b>within 5</b></li> <li>• Model</li> <li>• Solve</li> </ul>	}	Using <ul style="list-style-type: none"> <li>• Concrete Objects</li> <li>• Number Line</li> <li>• Combining</li> <li>• Taking Away</li> <li>• More/Less</li> </ul> Include Counting <u>On</u> )	KINDERGARTEN: COMMON ADDITION AND SUBTRACTION PROBLEM TYPES		<b>Join (Result Unknown)</b>	Sue had 4 pennies. Josh gave her 2 more. How many pennies does Sue have altogether?	<b>Separate (Result Unknown)</b>	Sue had 8 pennies. She gave 5 pennies to Josh. How many pennies does Sue have now?	<p>K.1a</p> <p>K.1b</p> <p>K.2ab</p> <p>K.3a</p> <p>K.3d</p> <p>K.3b</p> <p>K.3c</p> <p>K.4ab</p> <p>K.6, K.1ab</p> <p>K.7</p>
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<b>Unit 6 Ongoing Assessment (checklists, etc.)</b>	<b>K.1ab, K.2ab, K.3abcd, K.4ab, K.6, K.7</b>									
<b>Objectives Completed</b>	<b>None</b>									

**Unit 7: Fractions (Fair Shares)**  
**February 24 – March 6, 2020 (10 days)**

<b>Focus Topics</b>	<b>Standards of Learning</b>
Fractions – Equal sharing with two sharers <ul style="list-style-type: none"><li>• Represent concretely or pictorially</li><li>• Solve practical problems</li><li>• Whole</li><li>• One half/halves</li></ul>	K.5
<b>Unit 7 Ongoing Assessment (checklists, etc.)</b>	<b>K.5</b>
<b>Objectives Completed</b>	<b>K.5</b>



**Unit 8: Number Sense 4**  
**March 9 – May 1, 2020 (33 days)**

Focus Topic	Standards of Learning													
<p>Numbers <b>0-20</b></p> <ul style="list-style-type: none"> <li>Count Sets               <ul style="list-style-type: none"> <li>Counting with one-to-one correspondence (ex. Counting Jar)</li> <li>Tell how many</li> <li>Read</li> <li>Write</li> <li>Represent</li> </ul> </li> </ul> <p>Review: Compare and Order Sets <b>up to 10</b>            Counting forward orally <b>to 100</b>            Count forward by tens with objects <b>to 100</b>            “Number after”/One More orally <b>to 100</b> without counting all “Number before”/One Less orally <b>from 10</b> without counting all</p> <p>Fluency with Part-Whole Relationships Numbers <b>to 5</b>; Describe Part-Whole Relationships Numbers <b>to 10</b></p> <p>Single-step Story Problems</p> <table border="0" style="margin-left: 20px;"> <tr> <td style="vertical-align: middle;"> <ul style="list-style-type: none"> <li>Sums <b>to 10</b></li> <li>Differences <b>within 10</b></li> <li>Model</li> <li>Solve</li> </ul> </td> <td style="font-size: 3em; vertical-align: middle; padding: 0 10px;">}</td> <td style="vertical-align: middle;">           Using           <ul style="list-style-type: none"> <li>Concrete Objects</li> <li>Number Line</li> <li>Combining</li> <li>Taking Away</li> <li>More/Less</li> </ul>           Include Counting <u>On</u>)         </td> </tr> </table> <p>Continue: <i>Join</i> and <i>Separate</i> Problem Types Introduce:  <b>Part-Whole</b> Problem Types</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">KINDERGARTEN: COMMON ADDITION AND SUBTRACTION PROBLEM TYPES</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><b>Join (Result Unknown)</b></td> <td>Sue had 4 pennies. Josh gave her 2 more. How many pennies does Sue have altogether?</td> </tr> <tr> <td style="text-align: center;"><b>Separate (Result Unknown)</b></td> <td>Sue had 8 pennies. She gave 5 pennies to Josh. How many pennies does Sue have now?</td> </tr> <tr> <td style="text-align: center;"><b>Part-Part-Whole (Whole Unknown)</b></td> <td>Josh has 4 red balloons and 3 blue balloons. How many balloons does he have?</td> </tr> <tr> <td style="text-align: center;"><b>Part-Part-Whole (Parts Unknown)</b></td> <td>Josh has 5 balloons. Some of them are red and some of them are blue. How many balloons can be blue and how many can be red?</td> </tr> </tbody> </table> <p>Money: Review: Attributes of a penny, a nickel, a dime, a quarter; Identify number of pennies in a quarter</p>	<ul style="list-style-type: none"> <li>Sums <b>to 10</b></li> <li>Differences <b>within 10</b></li> <li>Model</li> <li>Solve</li> </ul>	}	Using <ul style="list-style-type: none"> <li>Concrete Objects</li> <li>Number Line</li> <li>Combining</li> <li>Taking Away</li> <li>More/Less</li> </ul> Include Counting <u>On</u> )	KINDERGARTEN: COMMON ADDITION AND SUBTRACTION PROBLEM TYPES		<b>Join (Result Unknown)</b>	Sue had 4 pennies. Josh gave her 2 more. How many pennies does Sue have altogether?	<b>Separate (Result Unknown)</b>	Sue had 8 pennies. She gave 5 pennies to Josh. How many pennies does Sue have now?	<b>Part-Part-Whole (Whole Unknown)</b>	Josh has 4 red balloons and 3 blue balloons. How many balloons does he have?	<b>Part-Part-Whole (Parts Unknown)</b>	Josh has 5 balloons. Some of them are red and some of them are blue. How many balloons can be blue and how many can be red?	<p>K.1a</p> <p>K.1b</p> <p>K.2ab</p> <p>K.3a</p> <p>K.3d</p> <p>K.3c</p> <p>K.4ab</p> <p>K.6, K.1ab</p> <p>K.7</p>
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<p><b>Unit 8 Ongoing Assessment (checklists, etc.)</b></p>	<p><b>K.1ab, K.2ab, K.3abcd, K.4ab, K.6, K.7</b></p>													
<p><b>Objectives Completed</b></p>	<p><b>K.1ab, K.2ab, K.3abcd, K.4ab, K.6</b></p>													

**Unit 9: Measurement**  
**May 4 – May 22, 2020 (15 days)**

Focus Topics	Standards of Learning
<p>Nonstandard Measurement</p> <ul style="list-style-type: none"> <li>• Direct Comparisons [vocabulary]               <ul style="list-style-type: none"> <li>○ length (shorter, longer)</li> <li>○ height (taller, shorter)</li> <li>○ weight (heavier, lighter)</li> <li>○ temperature (hotter, colder)</li> <li>○ volume (more, less),</li> <li>○ time (e.g. calendar, duration of events: longer, shorter)</li> </ul> </li> </ul> <p>Money:</p> <ul style="list-style-type: none"> <li>• Review               <ul style="list-style-type: none"> <li>○ attributes of a penny, a nickel, a dime, a quarter</li> <li>○ number of pennies equivalent to a nickel, a dime, a quarter</li> </ul> </li> </ul>	<p>K.9</p> <p>K.8</p> <p>K.7</p>
<p><b>Unit 9 Ongoing Assessments (checklists, etc.)</b></p>	<p><b>K.7, K.8, K.9</b></p>
<p><b>Objectives Completed</b></p>	<p><b>K.7, K.8, K.9</b></p>

