

Curriculum Parent Overview (Kindergarten)

MATHEMATICS

UNIT #1: Counting People, Sorting Buttons

CONTENT FOCUS:

Students are introduced to *Attendance* and *Calendar*, two of the ongoing Classroom Routines that support the development of counting. They explore some of the math materials they will use all year long - pattern blocks, Geoblocks, connecting cubes, color tiles, and buttons.

Counting Jar is another yearlong activity that supports students in developing strategies for counting and representing quantities. They also describe attributes of objects, focusing on color, size, and shape, and play games in which they match objects that have at least one attribute in common. Students will also be introduced to a Classroom Routine called *Today's Question*, a routine that focuses on collecting, organizing, representing, and describing data and that provides practice with counting and comparing quantities.

UNIT FOCUS:

- Counting and representing quantities: Number concepts are central to each of the yearlong activities introduced in this unit. Each involves counting and provides a chance to compare quantities with terms such as *more*, *less*, and the *same* (equal). Students count themselves, their classmates, the days on the calendar, a set of objects in a jar, and names on a chart. In addition to counting a given set, students are asked to make a set of a given size and, eventually, to represent a quantity on paper. Although some students can recite some portion of the "counting song," many have minimal experience with the counting sequence or the process of counting. Because young children learn to count by having many opportunities to count and to see and hear others count, and because much of the counting in this unit focuses on a number that is quite large for beginning-of-the-year (i.e. number of students in the class), much of the counting happens in the whole group. Students count along as high as they are able. There are several reasons for the focus on a relatively large number. Teachers are required to take attendance and most involve students in this process. This number will also play an important mathematical role this year, as many activities involve data about the class. As students think about who is here and who is not, and eventually, *how many* are here and *how many* are not (and how they know), they begin to consider part-whole relationships, such as the relationship between the number present, the number absent, and the total number of students in the class. When students count sets on their own, the numbers are quite small so that students can focus on learning the sequence and other important aspects of counting - giving one number to each object, counting each object once and only once, keeping track of what has been counted and what remains to be counted, seeing the last number said represents the total number counted, and so on. Students need many experiences with representing quantities as they develop an understanding of counting, quantity, and representation of it. In the Attendance routine and the Counting Jar routine, students are asked to represent a quantity - first with manipulatives and later on paper.
- Sorting and classifying: Throughout the year, students use manipulatives to solve math problems, model their thinking, and show their solutions. Because young children need to be familiar with such tools in order to use them effectively, this unit asks students to

explore pattern blocks, Geoblocks, connecting cubes, color tiles, buttons, and attribute blocks. This presents a context for encountering and using words that describe relative positions such as *above*, *on top of*, *below/under*, *in front of*, *behind*, and *beside/next to*. Identifying attributes of objects is essential to the study of mathematics, particularly data and geometry. The attributes of the materials students use in math class include color, shape, size, material, thickness, number of holes, and function. Students will begin to discover and explore these attributes as well as relationships inherent in the materials (e.g., you can use two red trapezoid pattern blocks to make a shape the same size and shape as the yellow hexagon) that will prepare them to use such manipulatives in a more structured and focused way later in the year. After such materials are explored, students use attributes to match, sort, and classify objects. These activities build on their natural interest in thinking about how things are the same and different. Students must identify an attribute of one person or object in order to find another that shares that attribute (e.g., a button has two holes) or students sort a set of people or attribute blocks into two groups (e.g., children who are wearing sneakers). As students look for similarities among people or objects, they begin to see how two objects can be the same in some ways and different in others. Once sorted, students count how many people or objects are in each group, and think about which group has more and how they know.

- Collecting, representing, describing, and interpreting data: It is important that students have the opportunity to experience the many aspects of carrying out a data investigation - collecting, recording, representing, describing, and interpreting data. In this unit, students will be introduced to *Today's Question* routine which asks students to respond to a survey question. Because it includes questions that help classmates get to know one another, this activity also serves the goal of developing a classroom community. After everyone has responded, students analyze the results by thinking about the questions, such as *How many people said "yes"?* Students collect, count, represent, and interpret data about themselves as they take attendance. While determining how many students are here or not here, they count and compare quantities that have real meaning to them. As they analyze the two groups, students consider which is more and which is less and begin to explore part-part-whole relationships.

MATHEMATICAL PRACTICES:

MP1: Make sense of problems and persevere in solving them.

MP5: Use appropriate tools strategically.

CONNECTIONS TO PREVIOUS CONTENT:

Students entering kindergarten bring with them a good deal of informal experience with numbers and counting, shapes, and geometry, and even patterns and data. Most count small quantities, such as the number of crackers for snack, and use numbers to describe how old they are. They compare who has more or less as they think about what is fair and use measurement ideas to determine who is taller or shorter. They sort and classify as they think about how two objects are the same and different, and have a sense of shapes and how they fit together as they interact with objects in their environment. This unit is designed to meet the needs of the range of 5-year-olds entering Kindergarten, whatever their experience.

CONNECTIONS TO FUTURE CONTENT:

The work in this unit lays the foundation for subsequent units in the kindergarten sequence. The Classroom Routines are revisited in every unit and vary as students' mathematical understandings grow and deepen. Students use the manipulatives they explored in this unit in more focused ways as they solve problems and represent solutions throughout the year.

MATH AT HOME:

- Play any of the following games with your child on SavvasRealize site after it has been introduced in the classroom:
 - Attribute Block Match-Up
 - Button Match-Up
 - Sorting Attribute Blocks
- Explore the calendar as a tool for keeping track of time and events by showing your child how you use it.
- Encourage your child to describe the physical features of objects and to think about how objects are alike or different. *How would you describe this ball?* (e.g., red, round, big) Also, encourage your child to use words to describe where a picture or object is in relation to another (e.g., next to, near, under, over, below, above).
- Take advantage of any opportunities to count with your child. Children learn to count accurately by having opportunities to see and hear other people count.
- Have your child sort objects with you such as laundry or silverware.
- Review the Math Words and Ideas videos for this unit on SavvasRealize site.