Cluster 1: Building A Mathematical Community through Exploring Attributes
Duration*: 2-3 weeks*

Content Standards:
This list includes standards addressed in this cluster, but not necessarily mastered, since all standards are benchmarks for the end of the year. Note strikethroughs and recommendations in the Important Considerations section for more information.

NC.K.MD.1
Describe measurable attributes of objects; and describe several different measurable attributes of a single object

NC.K.MD.2
Directly compare two objects with a measurable attribute in common, to see which object has "more of/less of" the attribute *[**without counting]**,* and describe the difference.

NC.K.MD.3
Classify objects into given categories; ~~count the numbers of objects in each category and sort the categories by count.~~

NC.K.G.1
Describe objects in the environment using names of shapes, and describe the relative positions of objects using positional terms.

Mathematical Practices:
1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning.

What is the Mathematics?
In this cluster we are establishing a foundation for all mathematical work by creating a positive and respectful climate for learning. The goal is to set up a classroom in which students will feel safe to engage in discourse around mathematical topics. Mathematical discourse can reveal understandings and misunderstandings, support robust learning by boosting memory, support deeper reasoning, support language development, and support development of social skills. In addition, building a community of learners with a mathematical mindset in which students persevere and learn from mistakes is essential.

- Students participate in discussions focused on exploring attributes. Students learn to share their thinking, listen to the ideas of others, and ask questions to clarify their own understanding.
- Students describe attributes and compare objects to see how they are the same and different (ex. quantity, size, shape, color, texture) with words like longer/shorter, more/less, bigger/smaller, heavier/lighter, softer/harder, etc.
- Students recognize that things can be alike and different in many ways. They sort objects and explain the attribute(s) used to sort.
- Students use shape vocabulary informally in block centers and math centers to talk about attributes of different shapes and how they are alike and different. Positional vocabulary is modeled in natural settings (ex. Bill is standing behind Susan. Amy is first in line).

- Students get to know each other by posing questions and collecting data about themselves and their surroundings (ex. how we get to school, lunch choice, types of shoes we are wearing)

Important Considerations:
- Although neither counting nor geometry is the focus of this cluster, some students may naturally count in situations of sorting, describing, and comparing attributes. This is a good time to formatively assess both students' counting and their understandings of geometry as they are working (ex. In the block center, "How many cubes did you use in your tower?" or in a math center, "How many green triangles did you use to fill up that shape?" or "How many buttons in your pile were red?")
- Formal development of geometry vocabulary is not a focus in this cluster. Rather students use terms informally through math centers and activities (blocks, sorting pattern blocks, etc.) NC.K.G.1 can be considered a supporting standard in this cluster. This standard will be address formally in Cluster 4.
- Much of the time spent in this cluster will be setting up math routines and expectations about what it means to think and talk mathematically in your classroom.