MA.K.DP.1.1

Overarching Standard: MA.K.DP.1 *Develop an understanding for collecting, representing and comparing data.*

Benchmark of Focus
MA.K.DP.1.1: Collect and sort objects into categories and compare the categories by counting the objects in each category. Report the results verbally, with a written numeral or with drawings.

Example
A bag containing 10 circles, triangles and rectangles can be sorted by shape and then each category can be counted and compared.

Benchmark Clarifications
Clarification 1: Instruction focuses on supporting work in counting.
Clarification 2: Instruction includes geometric figures that can be categorized using their defining attributes.
Clarification 3: Within this benchmark, it is not the expectation for students to construct formal representations or graphs on their own.

Related Benchmark/Horizontal Alignment
- MA.K.NSO.1.1/1.4
- MA.K.M.1.1
- MA.K.GR.1.1/1.2/1.3/1.4

Vertical Alignment

Previous Benchmarks	Next Benchmarks
VPK	MA.1.DP.1.1 MA.1.DP.1.2

Purpose and Instructional Strategies
The purpose of this benchmark is to develop a foundation for statistical thinking, as well as providing a context to support the development of counting skills. *(MTR.5.1)*
- Instruction reinforces the counting and comparing benchmarks within the Number Sense and Operations strand. *(MTR.5.1)*
- Instruction reinforces the identifying and sorting of figures benchmarks within the Geometric Reasoning strand. *(MTR.5.1)*

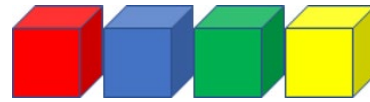**Common Misconceptions or Errors**

- Students may not clearly define categories for sorting objects which may lead to inaccurate data collection as objects fit into multiple categories.

- When students are presented with objects to be sorted into predefined categories, they may be frustrated that some objects don't fit into any category.

Strategies to Support Tiered Instruction:

- Instruction includes opportunities to sort 3D shapes. Teacher places foam, wood and/or pattern blocks into a bucket. Students are asked to sort the blocks. The teacher will see how the students sort the blocks and ask the students to explain why they sorted the blocks a particular way (could be by color, size, texture etc.) If students are unsure of where to place a block, help them determine what category in which to place the block.
    - For example, students will count how many blocks are in each of their groups and record the numeral. The teacher asks comparing questions about the groups such as "How are these shapes different from one another?" or "Are there more red shapes or blue shapes?" or "Are there more squares than triangles?" The teacher will then ask the students to sort the blocks another way and repeat the activity after the blocks have been classified a new way.


Shapes are sorted by color   Shapes are sorted by type

- Instruction provides opportunities to sort objects by attribute.
    - For example, with school supplies, the teacher asks students to sort all the objects that can write in one group (pencils, crayons, markers etc.) and put all the objects that do not write in another (paper, white boards, tape etc.). Then, the teacher asks students to describe how the object fits that attribute. If students are having difficulty finding objects with that attribute, the teacher provides examples for them to follow. The students count the number of objects in each of their groups and record the numeral.

Items that write in the classroom

Questions to ask students:
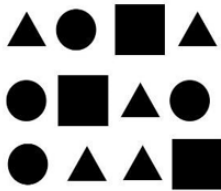
- Sort the objects. Count the objects in each set. Which set has the greatest amount of objects? Least amount of objects?
  - Sample answer that indicates understanding: *"The objects with 3 sides (triangles) have the greatest amount with 5." "The objects with 4 sides (squares) have the least amount with only 3."*
- How are these objects the same? Different?
  - Sample answer that indicates understanding: *"The objects are the same because they are all shapes with closed sides and the same color." "The objects are different because they have different numbers of sides."*
- How are the objects different? Is it a different color, size, or shape?
  - Sample answer that indicates understanding: *"The objects have different shapes because the shapes have a different number of sides."*
- Can you sort these objects a new way?
  - Sample answer that indicates understanding: *"I could sort them by straights sides and curved sides."*

Instructional Tasks

Instructional Task 1

Provide students with cards or objects that can be sorted multiple ways (i.e., shapes that are various colors and could be sorted by shape or color). In a group, give students time to think and discuss the various ways the cards or objects could be sorted. After a discussion, the group will decide a way to sort the cards or objects and do so. Then the teacher asks questions such as: "Which group has the most?" "Which group has the least?" "How many are in [fill in the blank] group"? After a discussion, the cards or objects can be resorted, and the task can begin again.
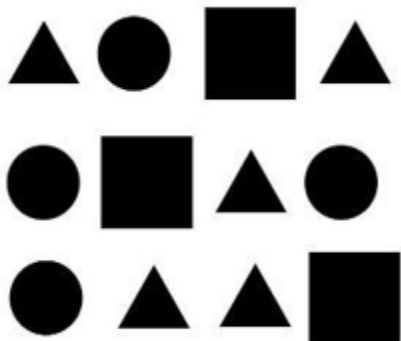
Instructional Task 2

At the beginning of the task, ask students:

- Which shape appears the most?
- How many more triangles are there than circles?
- How many squares are there?
- How many figures have straight sides?

Instructional Task 3

- Ask students to sort the figures into groups of circles, rectangles, and triangles.
- Ask same or similar questions from Task 2A.
- Discuss how sorting makes answering the questions easier.

Instructional Items
Instructional Item 1
Part A. Students can sort themselves based on given attributes (eye color, shirt color, method of transportation to or from school, etc.).

Part B. Have students report their sorting using a drawing.

Instructional Item 2
Part A. Circle the buttons that are shaped like triangles.

Part B. How many buttons are shaped like a triangle?

Additional Resources:

CPALMS: [MA.K.DP.1.1](#)

Khan Academy Video: [Counting by Category](#)

Resources/Tasks to Support Your Child at Home:

At home, give your child a set of objects with different categories (lucky charms cereal, coins, buttons, etc.). Have your child sort the objects by a category (type, color, number of sides) and then count to determine how many there are of each category. Ask your child questions about the categories like: *"Which was there the most of? Which was there the least of? Which categories had the same amount?"*

Online Game: [Interactive Venn Diagram](#) - This interactive site allows your child to select the attribute to sort by and then has them use a Venn diagram to sort. Once they've sorted their shapes by attribute, have them count and compare the number in each set.

ABCYa Online Game: Fuzz Bugs – [Counting, Sorting, Comparing](#) – this game has your child sort the "fuzz bugs" using a specified category and then count the number of objects in each category.

Khan Academy Practice: [Compare Number of Objects 1](#), [Compare Number of Objects 2](#)