Counting, Measuring, & Sorting Cars Math Activity Grades K-2

Objectives: Students will explore mathematical concepts through hands-on interaction with automobiles. They will practice counting and comparing numbers by observing features of different cars, such as wheels, doors, headlights, and other attributes. They will organize and interpret the data they collect by creating simple graphs, strengthening their understanding of numbers, measurement, and data representation in a real-world setting.

*This lesson is differentiated for students in grades K, 1, and 2.

Common Core Mathematics Standards:

Kindergarten:

- **K.CC.B.4:** Understand the relationship between numbers and quantities.
- **K.MD.B.3**: Classify objects and count the number in each category.

Grade 1:

- **1.MD.C.4:** Organize, represent, and interpret data with up to three categories.
- **1.MD.A.1:** Order objects by length and compare measurements.

Grade 2:

- **2.MD.D.10:** Draw a picture graph and bar graph to represent data.
- **2.MD.A.1:** Measure the length of an object using appropriate tools.

Materials:

- Toy cars or printed car images
- Measuring tools (e.g. rulers, Unifix cubes, etc.)
- Worksheets provided below
- Chalkboard, whiteboard, or chart paper
- Graph paper or access to online graphing tools

Directions:

Step 1: Tallying Data

- Present 5-10 reference vehicles for students to observe–this could be done through an in-person at Klairmont Kollections, a walk through the school parking lot, with toy vehicles, or printed photographs of vehicles found online.
    - Using the tally worksheet, students will record a tally of the features they observe on different vehicles.
        - For students in grades K-1, have them compare quantities of different attributes they observed on different vehicles (e.g., "Did you see more cars with 2 doors or 4 doors?", etc.). Record answers on the tally worksheet.
        - For students in grade 2, have them add quantities together across different attributes they observed (how many headlights total did they observe, etc.). Record answers on the tally worksheet.

Step 2: Sorting and Classifying

- Using the next section of the worksheet, have students count their tallies to determine how many cars fall into each group and record their findings.

Step 3: Measuring Skills

- Assign each student or group of students one car from those previously observed.
- Using a measuring tool, students will measure different parts of the car and record their findings on their worksheets.
    - For students in grades K-1, have them focus on estimating measurements.
    - For students in grade 2, have them practice accurate measurement using rulers.
- Once students are done measuring, compare the group findings on the chalkboard, whiteboard, or chart paper so it is viewable to all students.
    - Record all the lengths, heights, and widths of the measured cars. Then have students compare to find which car is the longest, tallest, and widest. Students should record this finding on their worksheet.

Step 4: Graphing Skills (grade 2 only)

- Using graph paper or online graphing tools, students can create graphs to represent their data.
    - Students can design a pie chart to represent the color distribution of cars they observed.

- ○ Students can design bar graphs to represent the number of doors, wheels, and headlights they observed.
- ○ Students can design line graphs to represent the lengths, heights, and widths of the cars they observed.

Tallying worksheet grades K-2

Car #	What color is this car?	How many doors does this car have?	How many wheels does this car have?	How many headlights does this car have?
1				
2				
3				
4				
5				

Sorting & Classifying directions for grades K-1: Write or circle the answer below that matches your findings.

1. Which color car did you see the most? _____

2. Did you see more cars with 2 doors, 3 doors, or 4 doors? (circle your answer)

> 2 doors   3 doors   4 doors

3. Did you see more cars with 2 wheels, 4 wheels, or 6 wheels? (circle your answer)

> 2 wheels   4 wheels   6 wheels

4. Did you see more cars with 1 headlight, 2 headlights, or 3 headlights? (circle your answer)

> 1 headlight   2 headlights   3 headlights

Sorting & Classifying directions for grade 2: Write your answers on the lines below.

1. How many cars of each color did you see?

    _____

    _____

    _____

2. How many doors did you count in total? _____

3. How many wheels did you count in total? _____

4. How many headlights did you count in total? _____
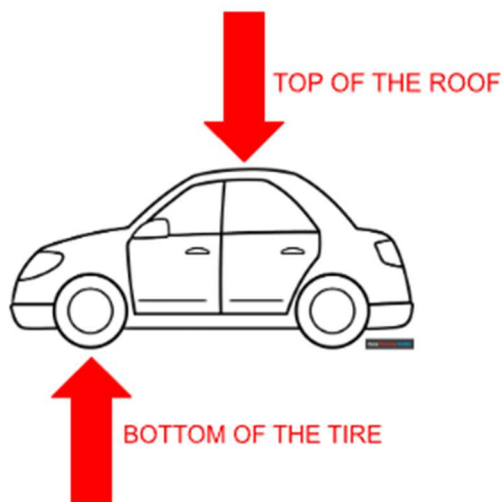
Measuring Skills worksheet grades K-2

1. What is the length of your car from bumper to bumper?

Length: _____ Unit: _____

2. What is the height of your car from the bottom of the tire to the top of the roof?

Height: _____ Unit: _____
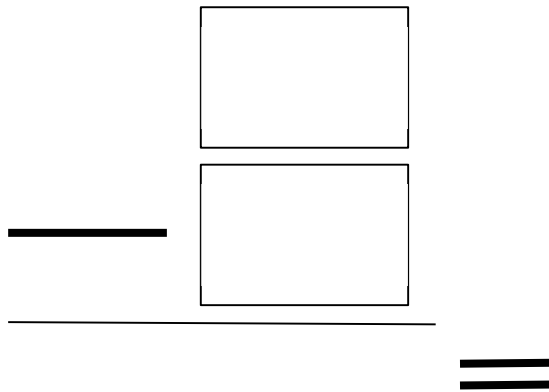
3. How wide is this car across the front?

Width: _____   Unit: _____
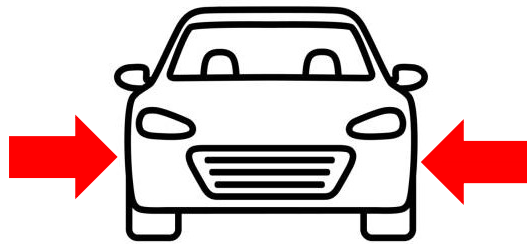
4. How long is the longest car in the whole class?

Length: _____   Unit: _____

5. Subtract to find out how much longer this car is than your car.
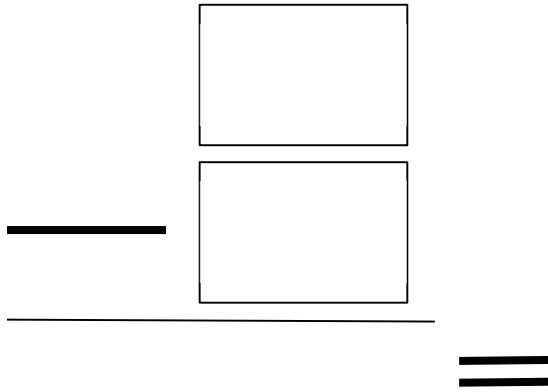
6. How tall is the tallest car in the whole class?
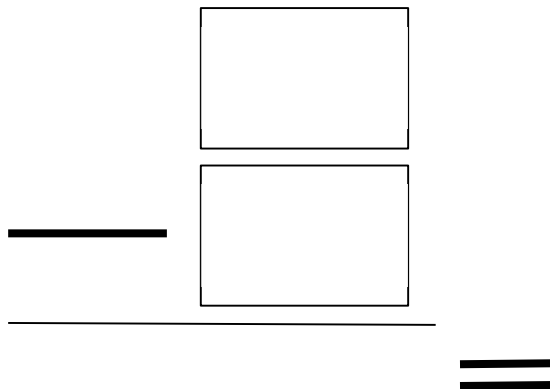
Height: _____   Unit: _____

7. Subtract to find out how much taller this car is than your car.

8. How wide is the widest car in the whole class?

Length: _____   Unit: _____

9. Subtract to find out how much wider this car is than your car.

Bring this lesson to the museum!

Help students connect their learning to real-world contexts by conducting this lesson plan at Klairmont Kollections using vehicles on display!