Grade 3: Cluster 8
Using Tools to Measure Length, Weight, and Capacity

Dear _____

The purpose of this letter is to give you some background information about our new unit.

Focus of the Unit

This unit focuses on the customary measurement system, particularly with units of length, weight, and capacity. They have been working with fractions with a linear model and they will apply this knowledge to measuring the length of objects to the nearest ¼ and ½ inch.

In this unit, students will:

- Estimate using customary units for: length (inches, feet, yards); weight (ounces and pounds); and capacity (cups, pints, quarts, and gallons).
- Measure length to the nearest ¼ and ½ inch.
- Measure weight and capacity to the nearest whole unit.
- Solve one-step story problems that involve whole-number measurements in the same customary units.

Building off Past Mathematics

In Kindergarten and first grade, students explored measurement in very concrete ways. They thought about what attributes of an object could be measured, compared the length of objects and decided which one was bigger and measured length with nonstandard units, such as paper clips. In second grade, students explored the relationship between two different measurements of the same object using two different units (for example, when measuring the length of a pencil, they measured in inches and in centimeters to explore how it takes more of a smaller unit to measure an object).

Strategies that students will learn

Students are most familiar with measuring the length of objects, or distances between two objects. To build on previous understanding, they will work with which customary unit of measure makes the most sense to use in a given situation. Would you use feet to measure a pencil? Would you use yards or miles to measure the distance from your house to the school? They will also begin to measure more precisely--to the ½ and ¼ inch--whereas previously they have only been measuring to the whole unit. They have been working with a linear model of fractions which will enable them to be successful with measuring more precisely.

Students will also estimate and measure capacity and weight in customary units using tools such as scales, balances, measuring cups, and gallon jugs. They will choose appropriate units for the object they are measuring, such as cups for the amount of milk they would drink for dinner and gallons for the amount of water they would use to fill a bathtub.

Finally, students will solve one-step story problems that involve whole number measurements in the same customary units. This will continue to reinforce skills with operations using a measurement context. For example:

- Timothy drank 2 quarts of water a day for 5 days. How many quarts of water did Timothy drink in all?
- Jenny's family drove 386 miles to her grandmother's house. Then they drove 532 miles to the beach. How many miles did they drive altogether?
- A bag of avocados weighed 42 ounces. Each avocado weighed 6 ounces, How many avocados were in the bag?

Ideas for home support

- Measurement is something we frequently do in real world. Pay attention to when you are thinking about measurement concepts or actually measuring something and involve your child in what you are thinking and doing. For example:
    - If you sew, build, or do any sort of craft and you have to measure to accurately complete a project, ask your child to help.
    - If you are thinking about whether a piece of furniture will fit in an area, involve your child in thinking about that and ask him or her to help.
- Ask your child to estimate the distance across a room or how much a pot will hold or how much a bag of dog food weighs. Talk about what unit is reasonable to use to measure--Inches or feet? Cups or gallons? Ounces or pounds? Let your child measure the length, capacity, or weight and see how accurate he or she is.

Thank you for serving as partners in your child's success as a mathematician!

Grade 3 Math Team