Dear Parents,

During Unit 2, your children will add and subtract within 1000 by applying their understanding of models for addition and subtraction. They will develop, discuss, and use efficient, accurate, and generalizable methods to compute the sums and differences of whole numbers in base ten notations, using their understanding of place value and the properties of the operations (they will need not use formal terms for these properties). Your children will work to develop written methods for recording sums and differences. They will be introduced to the concept of rounding, which provides them with another strategy to judge the reasonableness of their answers in addition and subtraction situations. Perimeter provides a context in which students can practice both rounding and addition and subtraction (e.g. estimating the perimeter of a polygon). They will also develop a conceptual understanding of measuring mass, liquid volume and intervals of time. Measurement word problems will be used as a context for the development of fluency in addition and subtraction.

**ADDITION, SUBTRACTION AND MEASUREMENT**

**Students need to:**

- Add and subtract within 1000 using strategies and algorithms based on the following: place value, properties of operations and the relationship between addition and subtraction
- Use place value understanding to round whole numbers to the nearest 10 or 100
- Solve two-step word problems. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length.
- Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
- Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).
- Add or subtract to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with measurement scale) to represent the problem.

**WAYS PARENTS CAN HELP**

- Help your child use addition or subtraction to solve real world problems (e.g. adding a bill, calculating change from a purchase...)
- Practice reading an analog clock.
- Help your child determine an end time given the start time and the duration of the event (e.g. you put something in the oven at 5:15 p.m. and it needs 32 minutes to cook, what time should you take it out of the oven).
- Look at real world examples showing liquid volumes and masses (e.g. packaged food such as a cereal box). Play a game to see how close your child can get to estimating these measurements.

**BACKGROUND INFORMATION/EXAMPLES FOR PARENTS**

**Addition:**
- http://video.carrollk12.org/view/GRANGERADDITIONWITH3DIGITSREGROUPING

**Subtraction:**
- http://video.carrollk12.org/view/GRANGERSUBT3DIGITSWITH3DIGITSREGROUPING
- http://video.carrollk12.org/view/GRANGERSUBT3DIGITSWITH3DIGITSACROSSZERO

**KEY VOCABULARY**

| Add | Identity Property |
| Addend | Invented strategies |
| Addition | Inverse operation |
| Associative Property | Minuend |
| Commutative Property | Missing Addend |
| Difference | More |
| Digit | Multiples of 10 and 100 |
| Estimate | Number line |
| Equal | Ones |
| Flexible methods of computation | Operation |
| Hundreds | Place value |
| Standard algorithm | Height |
| Subtract | Kilogram |
| Subtraction | Liter |
| Subtrahend | Mass |
| Sum | Measure |
| Tens | Milliliter |
| Thousands | Minutes |
| Minuend | Perimeter |
| Capacity | Scale |
| Gram | Standard unit |
| Elapsed time | |
Bar Models

Sam has 5 more cupcakes than Kara. Kara has 12 cupcakes. How many cupcakes does Sam have?

This example shows how a student might use a bar model to represent a word problem.