3ʳᵈ Grade Unit 1 Mathematics

Dear Parents,

The Mathematics Georgia Standards of Excellence (MGSE), present a balanced approach to mathematics that stresses understanding, fluency, and real world application equally. Know that your child is not learning math the way many of us did in school, so hopefully being more informed about this curriculum will assist you when you help your child at home.

Below you will find the standards from Unit One in bold print and underlined. Following each standard is an explanation with student examples. Please contact your child's teacher if you have any questions.

NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.

This standard refers to using place value understanding, which extends beyond an algorithm or procedure, for rounding. This is "rounding by reason" not by "rote". The expectation is that students have a deep understanding of place value and number sense. We want them to be able to explain and reason about the answers they get when they round. They should have a good understanding of the benchmark numbers that a given number is between and the approximate location (or proximity) of that given number to each of the benchmarks. Students should have numerous experiences using an empty number line as a tool to support their work with rounding.

Example:
- Question: Round 37 to the nearest ten.

| Student 1:	Student 2:
I know that 37 is located between 30 and 40. I also know that 35 is halfway between 30 and 40 and that 37 is more than 35. This means that 37 is closer to 40 than 30, so 37 would round to 40.	I know that 37 is located between 30 and 40. I know that it is 7 more than 30 and 3 less than 40, so it is closer to 40. This means that the nearest ten to 37 is 40.

Student 3:
I drew an empty number line.

I thought about the tens that 37 would be between and marked them on my empty number line.

Next, I knew that 37 is a little more than 35, which would be halfway between 30 and 40. I placed 37 on my number line to show this.
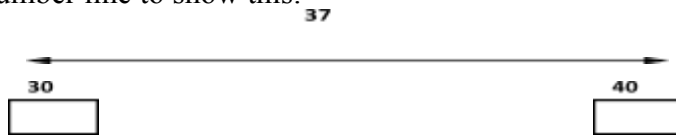
Because 37 is closer on the number line to 40 than 30, I know that 37 would round to 40.

NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

This standard refers to "fluency", which means accuracy, efficiency (using a reasonable amount of steps and time), and flexibility (using mental math strategies based on place value or properties). The word algorithm refers to a procedure or a series of steps. There are other algorithms other than the standard algorithm. Third grade students should have experiences with a variety of strategies and algorithms beyond the standard algorithm.

Example: There are 178 fourth graders and 225 fifth graders on the playground. What is the total number of students on the playground?

| Student 1— **Place Value Strategy** $100 + 200 = 300$ $70 + 20 = 90$ $8 + 5 = 13$ $300+90+13 = 403$ students	**Student 2—Properties** 178 is close to the friendly number 180, so I took 2 from the 225. I now have $180 + 223$ which is easier to add. $180 + 200 = 380$ $380 + 20 = 400$ $400 + 3 = 403$ students	**Student 3—Place Value** I know that 225 is $200 + 20 + 5$ $178 + 200 = 378$ $378 + 20 = 398$ Then $398 + 5$ is 403 students.

Student 4—
Empty Number Line
$178 + 225 = ?$

$178 + 200 = 378$
$378 + 20 = 398$
$398 + 5 = 403$
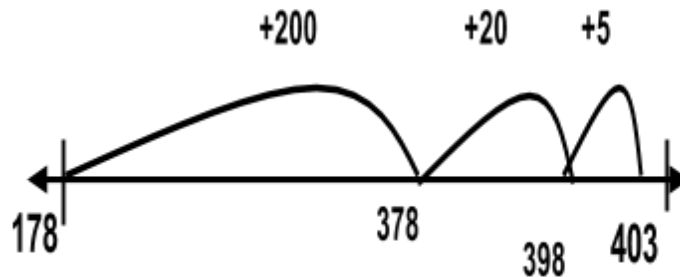
MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram, drawing a pictorial representation on a clock face, etc..
****Primary focus of telling time to the nearest minute in this unit.****

This standard calls for students to determine elapsed time, including elapsed time embedded within word problems. Students can use number line diagrams to determine elapsed time. On the number line, students should be given the opportunity to determine the intervals and size of jumps on their number line. Students could use pre-determined number lines (intervals every 5 or 15 minutes) or open number lines (intervals determined by students).

Example:

Tonya wakes up at 6:45 a.m. It takes her 5 minutes to shower, 15 minutes to get dressed, and 15 minutes to eat breakfast. What time will she be ready for school?
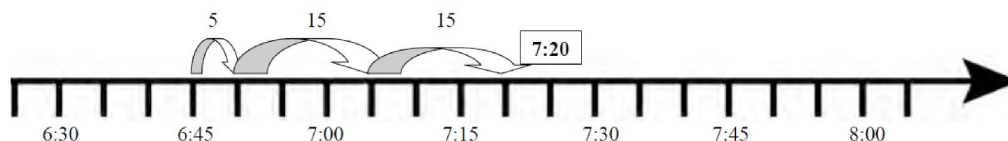
MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*

Students should have opportunities reading, interpreting, and solving problems using scaled graphs before being asked to create one from given data. The following graphs all use five as the scale interval, but students should experience different intervals (such as two and ten) to further develop their understanding of scaled graphs and number facts. Students should be graphing and interpreting data that is relevant to their lives

   Example:
   - **Pose a question:** What types of books do the students in our class read?
   - **Collect and organize data:** Take a student survey.

   Picture graphs: Scaled picture graphs include symbols that represent multiple units. Graphs should include a title, categories, category labels, key, and data.
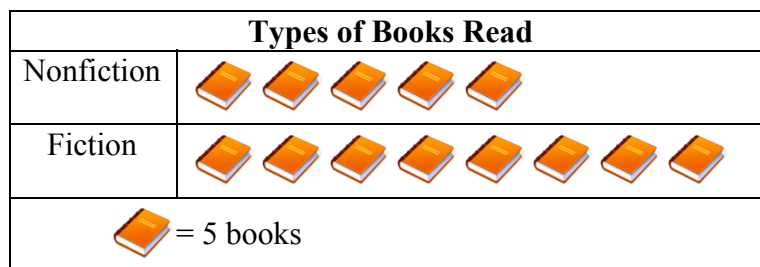
   Single Bar Graphs: Students use both horizontal and vertical bar graphs. Bar graphs include a title, scale, scale label, categories, category labels, and data.
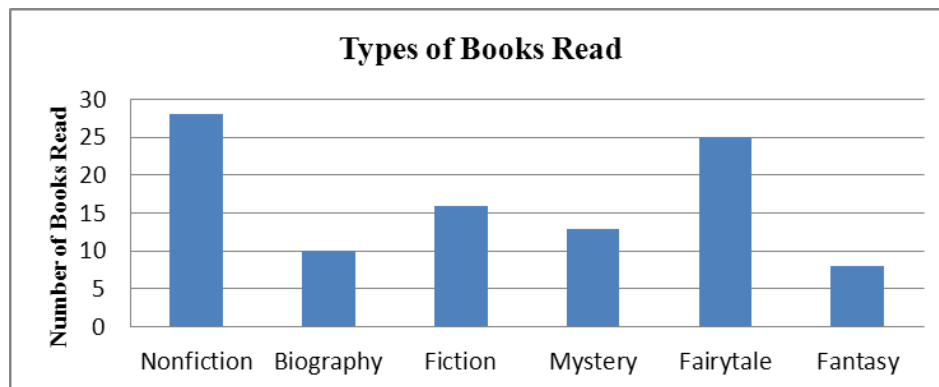
   - **Analyze and Interpret data:** For all types of graphs, charts, and tables, students should answer interpretive questions.
     Students should answer questions such as:
       ▪ How many more nonfiction books were read than fiction books?
       ▪ Did more people read biography and mystery books or fiction and fantasy books?
       ▪ About how many books in all genres were read?
       ▪ Using the data from the graphs, what type of book was read more often than a mystery but less often than a fairytale?
       ▪ What interval was used for this scale?
       ▪ What can we say about types of books read?
       ▪ If you were to purchase a book for the class library which would be the best genre? Why?