Parent Strategies for Supporting Mathematics Instruction
Mobile County Public Schools

Student Name: _____ Grade Level: _____

School: _____ Date: _____

Teacher Name: _____ Email: _____

Preparing students for the 21st-century workforce requires that they do more than simply compute or carry-out meaningless procedures. Instead, students need a more thorough understanding of mathematics concepts—they need to know how, why, and when to apply knowledge and problem-solving strategies. In addition, they need to know how to communicate their thinking effectively.

Parent involvement has a positive impact on student achievement in math; however, this involvement should go beyond simply helping their child with his or her homework. Rather, supportive parental involvement includes encouraging students to participate in math-related activities, promoting positive attitudes and beliefs about mathematics, and demonstrating the importance of mathematics in daily activities. When parents and their children engage in interactive mathematics conversations and activities—beyond traditional pencil and paper homework—students' attitudes about their ability to succeed in mathematics improves.

RECOGNIZING NUMBERS

Students in early grades (PreK through 1st grade) need to know that numbers are used to describe quantities.

- **Count everything**—from toys, to kitchen utensils, to items of clothing. Help your child count by pointing to and moving objects as you say each number aloud. Have your child count similar items as you put away the groceries.
- **Count forward and backward** starting from different starting points.
- **Sing counting songs and read counting books**. Counting songs like "One, Two, Buckle My Shoe" make learning to count fun. Counting books use pictures of interesting things to count and to add, capturing the imagination of children.
- **Go on a "number hunt**" in your home or while on a walk in your neighborhood. See if you can find all of the numbers between 1 and 10. Show how numbers are used on the TV, microwave, or telephone.
- **Practice skip counting**. Count by 2s, 5s, and 10s (i.e., "*2-4-6-8-10-12…*", or "*5-10-15-20-25…*", or "*10-20-30-40-50…*")
- **Make a number book.** Place a number from one to ten on each page in the book and have your child glue clippings from newspapers and magazines illustrating that number concept (two dogs, three frogs, etc.). As your child progresses with number recognition, they can add to the book and add numerical figures used in various ways.
- **Count and pair objects** found around the house (such as doors, sinks, etc.). Determine when there is an odd or even number of items.

DEVELOPING AUTOMATICITY

Part of developing fluency in solving mathematical problems is the ability to develop immediate fact recall (known as automaticity). Immediate fact recall requires repetitive practice. Time for practice in school may be limited, so parents can help in variety of ways.

- For students in grades 2-3, practice addition and subtraction problems of single-digit numbers when driving, walking, waiting in line, etc.
- For students in grades 3-5, practice addition, subtraction, and multiplication problems when driving, walking, waiting in line, etc.
- Play games using dice and cards. Roll two dice and add or multiply the numbers that come up. See how many cards it takes to add up to reach a certain number like 20 or 100.
- When shopping, have your child calculate the price of produce by multiplying the price per pound by the number of pounds.

INVESTIGATING PROBLEM SOLVING

Allowing students to struggle with solving problems and to use a variety of problem solving strategies is vital to learning mathematics. Though it is tempting to use a formula or process for solving mathematical problems, introducing that process too early can hamper your child's learning development in mathematics.

- Parents can support students who may be struggling with a math problem by asking them the following questions:

  What are you being asked to find out?
  Can you describe what the problem is telling you?
  Have you seen a problem like this before?
  Is there any part of the problem that you know how to do already?
  Will it help to make a list, a drawing, a diagram, or a table?
  Do you have an estimate of what your answer will be?
  How do you know if your answer is right or wrong?

- Relate addition, subtraction, and multiplication to every day experiences.

  "If we had 12 eggs and used 5 of them for breakfast, how many eggs are left?"
  "You have saved $6 from your allowance last week. The toy you want costs $14. How much of your allowance will you have to save this week?"
  "You wore two shirts today and your sister wore three shirts. How many shirts do I need to wash?"
  "You have two friends coming to eat with us and your sister has one friend coming to eat with us. How many plates will we need for dinner?"

- Give your child change to count out and pay for small purchases at the store; allow older children to calculate the change.

UNDERSTANDING MEASUREMENT AND DATA

Developing the ability to estimate and to measure accurately takes time and practice.

- **Measure items found around the house**. Use a ruler or tape measure to measure items. Fill different containers with sand in a sandbox or with water in the bath, and see which containers hold more and which hold less.
- **Estimate everything!**
  Estimate the number of steps from the front door to the mailbox and then walk to find out how many there really are.
  Estimate how many pieces of bread your family will eat during the week, and then count at the end of the week to determine how many were actually consumed.
  Estimate how long it will take to travel from the store to the grocery store.
  Ask your child, "If it is going to take 20 minutes to drive to school, what time should we leave each morning?"
- **Compare household items**. Have your child organize cereal boxes or cans of vegetables from tallest to shortest. When shopping, compare prices of similar items by having them determine which costs more.
- **Talk about time**. Record on a calendar the time of each of your child's activities throughout the day (e.g., wake-up time, school take-in time, dinnertime, soccer practice, favorite TV show, bedtime, etc.)
- **Record daily temperatures**. Keep a record of the daily temperature for an entire month, and then discuss how much the temperature changed from the first day of the month to the last day of the month. Graph the temperatures for a week or the month.
- **Involve your child in activities that involve measurements**. Have your child measure the ingredients in a recipe or the length of a piece of wood being used to build something. Trade equal amounts of money (e.g., trade 5 pennies for a nickel, ten dimes for a dollar, etc.). Allow your child to weigh produce at the store.
- **Read the days and dates on a calendar**, talking about the number of days in the month and the number of days remaining until a special event.
- **Open a pack of Skittles or M&Ms** and make a bar graph showing the number of each color found in the pack.

UNDERSTANDING GEOMETRY

Identifying and describing shapes, sizes, positions, and directions is important in developing the spatial relationships that will be required to grasps the principles of geometry in later grades.

- **Identify shapes and sizes.** Ask your child to find something in the yard that is a specific shape, such as a circle or a square. Fold napkins in different shapes.
- **Build structures using blocks or boxes.** Discuss the importance of having a strong base. Ask your child to identify which shapes stack easily and why.
- **Hide an item and use directional language to find it.** Give clues that use such words and phrases as *up, down, over, under, below, between,* and *on top of.*
- **Play "I spy"** using shapes (e.g., "I spy something round/rectangular/looks like a cone.")
- **Go on a "shape hunt."** Go on a walk and identify as many circles, squares, triangles, and rectangles as you can. For students in later elementary grades, do the same thing with cubes, cones, spheres, and cylinders. Identify the different shapes of street signs.
- **Arrange objects by their attributes** (length, weight, and volume). Have your child explain why they arranged the objects in the order that they did using comparison words like *taller, shorter, heaviest, lightest, more, less, about,* and *same.*