Parents' Math-At-Home Plan for Student Success

Parents' Math-At-Home Plan for

Student Success

Parents,

A student is identified as having a substantial deficiency in mathematics if the following criteria are met: If a student in kindergarten through fourth grade scores below the 10th percentile based on screening, diagnostic assessments, progress monitoring, other classroom data, and statewide assessments. If the teacher has observed the student demonstrating the minimum skill levels for mathematics competencies in one or more areas for that grade level (see below), they may be referred as well.

Kindergarten -

- Developing an understanding of counting to represent the total number of objects in a set and to order the objects within a set
- Develop an understanding of addition and subtraction and the relationship of these operations to counting
- Measuring, comparing, and categorizing objects according to various attributes, including two and three dimensional shapes

First Grade -

- Understanding the place value of tens and ones within two-digit whole numbers
- Extending understanding of addition and subtraction and the relationship between them
- Developing an understanding of measurement of physical objects, money, and time
- Categorizing, composing, and decomposing geometric figures

Second Grade -

- Extending understanding of place value in three-digit numbers
- Building fluency and algebraic reasoning with addition and subtraction

- Extending understanding of measurement of objects, time and the perimeter of geometric figures
- Developing spatial reasoning with number representations and two-dimensional figures

Third Grade -

- Adding and subtracting multi-digit whole numbers, including using a standard algorithm
- Building and understanding of multiplication and division, the relationship between them and connection to area of rectangles
- Developing an understanding of fractions
- Extending geometric reasoning to lines and attributes of quadrilaterals

Fourth Grade -

- Extending and understanding of multi-digit multiplication and division
- Developing the relationship between fractions and decimals and beginning operations with both
- Classifying and measuring angles
- Developing and understanding for interpreting data to include mode, median, and range

An early warning system is used to identify students in kindergarten through fourth grade who need additional support to improve academic performance and stay engaged in school. Data regarding student's early warning indicators will be used to inform intervention strategies provided to the student. Students will be provided high-quality instruction using the state approved mathematics curriculum and differentiating strategies. Small group instruction, supplemental, evidence-based mathematics interventions delivered by a highly qualified teacher, and monitored to adjust based on student's need. Students demonstrate proficiency by achieving a Level 3 or higher on the statewide, standardized Mathematics assessment.

This resource was created to assist you in understanding how to support your child's development and progress in mathematics. Using materials found around your home, you will be able to practice the skills necessary to help your child to be on grade level or higher. We are happy to provide you with this Math-At-Home Plan.

Sincerely,
Curriculum and Instruction
Sumter County Schools

Parents' Math-At-Home Plan for

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Important Words Parents Should Know

Benchmark
How a child performs in math compared to other children their age or what they are expected to know.

Screener
A test used to identify students who fall at or below benchmark; usually given three times a year.

Diagnostic
An additional test that tells why a child is not at benchmark in math by looking deeply at a specific area, and what may be done to help in this area.

Math Intervention
Additional, specific small-group instruction to increase or improve children's skills in one of the components of math (Number sense and operations, Algebraic Reasoning, Measurement, Geometric Reasoning, Data Analysis & Probability, and Fractions).

Math Deficiency
A specific weakness in one of the components of math (Number sense and operations, Algebraic Reasoning, Measurement, Geometric Reasoning, Data Analysis & Probability, and Fractions).

WHAT ARE SOME QUESTIONS I SHOULD ASK A TEACHER ABOUT MY CHILD'S PROGRESS IN MATH?

- Is my child on grade level for math? What does "on grade level for math" look like?
- What test does my child take to find out if they are grade level for math?
- How far below grade level is my child in math?
- What specific areas of math is my child struggling with? What activities can I do with my child at home to help?
- What additional supports are being provided to my child? How frequently, and for how much time?
- How frequently will we meet to discuss my child's progress in math?

Parents' Math-At-Home Plan for

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What is my role?

Know that a math progress monitoring (FAST/iReady) is given to your child in the first 30 days of school if they are in K-5. Progress Monitoring are given again in December and in May. Ask your child's teacher how they did on each test. The school is required to tell you if the test results show your child has a math deficiency.

If your child does have a math deficiency, they will begin receiving math interventions during their school day to help build their capacity for math skills.

Use the Math-At-Home Plan to review these strategies with your student. Work with your child nightly to support what their teacher is doing at school.

Depending on the deficiency, your child will take tests periodically to see if the interventions are helping.

Make plans to attend any Parent/Teacher conferences throughout the year. Help your child with their homework and check their test scores or daily work. Ask to meet with your child's teacher if you have any questions or concerns about your child's progress in math.

You are your child's greatest champion!

Parents' Math-At-Home Plan for

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Emphasis by Grade Level

K	• Develop an understanding of counting to represent the total number of objects in a set and to order the objects within a set. • Develop an understanding of addition and subtraction and the relationship of these operations to counting. • Measure, compare, and categorize objects according to various attributes, including their two- and three- dimensional shapes.
1ST	• Understand the place value of tens and ones within two-digit whole numbers • Extend understanding of addition and subtraction and the relationship between them. • Develop an understanding of measurement of physical objects, money, and time. • Categorize, compose, and decompose geometric figures.
2ND	• Extend understanding of place value in three-digit numbers. • Build fluency and algebraic reasoning with addition and subtraction. • Extend understanding of measurement of objects, time, and the perimeter of geometric figures. • Develop special reasoning with number representation and two-dimensional figures.
3RD	• Add and subtract multi-digit whole numbers, including using a standard algorithm. • Build an understanding of multiplication and division, the relationship between them, and the connection to area of rectangles. • Develop an understanding of fractions. • Extend geometric reasoning to lines and attributes of quadrilaterals.
4TH	• Extend understanding of multi-digit multiplication. • Develop the relationship between fractions and decimals and beginning operations with both. • Classifying and measuring angles. • Develop an understanding for interpreting data to include mode, median, and range.

Ask about your child's Math progress frequently!

Parent Math-At-Home Plan

Student: _____ Grade: _____ Teacher: _____

Current Intervention(s): _____

Assessment(s)	Beginning of Year (BOY)	Middle of Year (MOY)	End of Year (EOY)
FAST (3-12)			
i-Ready (K-8)			
FAST -STAR • Early Literacy (K-1) • Reading (2) • Math (K-2)			

Identified Deficiencies (check all areas that apply):

- Number Sense and Operations
- Algebraic Reasoning
- Measurement
- Geometric Reasoning
- Data Analysis and Probability
- Fractions (Starts in 1st grade)

Parents' Math-At-Home Plan for Student Success

Number Sense and Operations

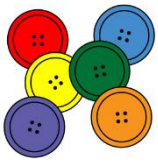
- Numbers are used to describe quantities to relate numbers to the qualities they represent, and to count.
- Understanding numbers and knowing how to combine them to solve problems helps us in all areas of math.
- Operations are the computations (addition, subtraction, multiplication, and division) that students perform with numbers.
- Number Sense and Operations should be taught together and in conjunction with other mathematical strands.
- Students should be able to perform computations fluently and in different ways. Examples include mental math, estimations in addition, and paper-pencil calculations.

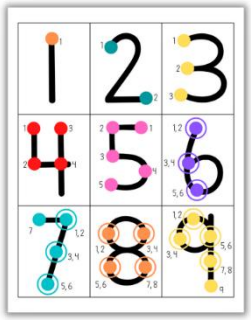
Number Sense and Operations Activities

- Counting opportunities are EVERYWHERE! Count EVERYTHING! Whether counting the number of steps in a staircase, Cheerios in a bowl, or dogs in the park, or even counting money in their piggy bank to help your child learn to count wherever you go. Other examples include: count toys, kitchen utensils, and items of clothing as they come out of the dryer. Use household items to practice adding, subtracting, multiplying, and dividing.
- Help your child by pointing to and moving the objects as you say each number out loud. Count forward and backwards from different starting places.
- Singing counting songs and read counting books. Examples: "One, Two, Buckle My Shoe" and "Ten Little Monkeys" which makes counting fun!
- Ask your child to help you solve every day number problems. Look for opportunities to count, add, subtract, multiply, or divide. Once children are able to count, look for opportunities to extend that knowledge. Examples: On a walk or drive say "I see two geese on this side of the lake and three geese on the other side. How many geese does that make?" With older children, provide more challenging opportunities like "This shirt is 10% off with a coupon at Disney

but $10 off at Target. Which ones will make a better deal?" "We need six tomatoes to make sauce for dinner and we only have two. How many more do we need to buy?"

- Ask children to write/tell their own story for an equation. For example, write a story for the equation 10-3=7 OR ask children to come up with different stories where the answer is 9.
- Going on a trip? Have children calculate how many days, how many meals, number of outfits to pack, etc.
- Practice "skip counting". Count orally by twos, fives, or tens together. Ask your child how far they can count by 10's.
- Complete connect-the-dot pictures. Number Collage: Get out newspapers and magazines. Look through them with your child, having them search for the numbers 1-30. Practice cutting and gluing skills by creating a collage.
- Board Games involving dice and count moves also improve number recognition and simple math. Great options are Chutes and Ladders and Candy Land.





Collect and Count

Collect small objects like pennies, buttons, blocks, or small toys and use them to do hands-on counting and soring activities with your child.

Read and Sing

Read books and sing songs that include numbers and counting to answer questions like "How many bunnies do you see?"

Card Game - WAR

Split a deck of cards (number cards only). With two people, flip a card and determine who has the higher number of the cards. In a tie, flip another card over; the higher card on that turn wins all the cards. Play until one person has all the cards in the deck.

Touch Math

Numbers 1-9 are assigned "Touch Points" that correspond with the quantity of the number. Students are taught to draw and use these "Touch Points" when counting. Once students become familiar with the individual numbers, they can use this system to add, subtract, multiply, or divide.

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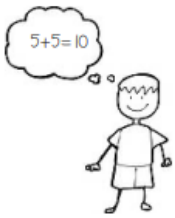
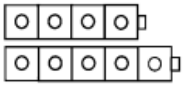
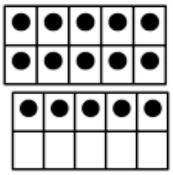
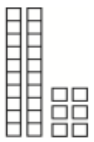
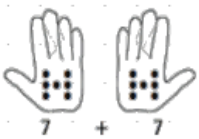
Fluency and Automaticity

Number sense and operations standards were developed with exploration, procedural reliability, and procedural fluency in mind. Exploration is the first step with the purpose of developing an understanding through the use of manipulatives, visual models, discussions, estimation, and drawings. Students will then use those skills to develop an accurate, reliable method that aligns to their own understanding and learning style. After, the expectation is to utilize the skills from procedural reliability to become fluent with an efficient and accurate procedure, including a standard algorithm.

The purpose of this table is to provide an overview of the procedural fluencies and recall with automaticity within number sense and operations and measurement.

Math fact fluency leads to higher order mathematics. Through automaticity, students free up their working memory and can devote it to problem solving, learning new concepts and skills.

Students can use these strategies to practice addition and subtraction facts at home.

Mental Math 	**120 Chart** 	**Write a Number Sentence** ___+___=___ ___-___=___	**Pictures** 4+6=___  + 
Tally Marks 	**Number Line** 	**Manipulatives** 	**Ten-Frame** 
Make 10 6 4 + 3 10 + 3 13	**Counting On/Back** Put the 1st number in your head and **count on** or **count back** 	**Base Ten Blocks** 26=  ___tens and ___ones	**Doubles Facts** 

K	• Recite numbers to 100 by ones and tens. • Count backward within 20. • Locate, order, and compare whole numbers up to 20. • Two one-digit whole numbers with sums from 0 to 10 and related subtraction facts.
1ST	• Count forward and backward within 120 by ones. • Skip count by 2s to 20 and by 5's to 100. • Plot, order, and compare whole numbers up to 100. • Recall two whole numbers with sums from 0 to 10 and related subtraction facts. • Two whole numbers with sums from 0 to 20 and related subtraction facts.
2ND	• Round whole numbers from 0 to 100 to the nearest 10. • Plot, order, and compare whole numbers up to 1,000. • Recall two whole numbers with sums from 0 to 20 and related subtraction facts. • Two whole numbers with sums up to 100 and subtract a whole number from a whole number, each no larger than 100.
3RD	• Round whole numbers from 0 to 1,000 to the nearest 10 or 100. • Plot, order, and compare whole numbers up to 10,000 and fractional numbers with the same numerator or the same denominator. • Multi-digit whole numbers, including using a standard algorithm. • Multiplication of a one-digit whole number by a multiple of 10 up to 90 or a multiple of 100 up to 900. • Two whole numbers with factors from 0 to 12 and related division facts.
4TH	• Round whole numbers from 0 to 10,000 to the nearest 10, 100, or 1,000. • Plot, order, and compare multi-digit whole numbers up to 1,000,000, decimals up to the hundredths, and fractions with different numerators and different denominators, including mixed numbers and fractions greater than 1. • Two fractions with like denominators, including mixed numbers and fractions greater than 1. • Recall two whole numbers with factors up to 12 and related division facts. • Multiplication of a whole number up to three digits by a whole number up to two digits. • Multiplication of a two-digit whole number by a two-digit whole number, including using a standard algorithm. • Division of a whole number up to four digits by a one-digit whole number.

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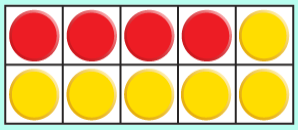
Algebraic Reasoning

- Algebraic Reasoning is the ability to recognize patterns, represent relationships, make generalizations, and analyze how things change.

Kindergarten - Represent and solve addition problems with sums between 0 and 10 & subtract using related facts. Students will develop an understanding of the equal sign. Students can use objects around the house as manipulatives to represent problems in different ways such as buttons, coins, etc. or draw counters!

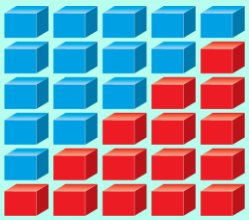
Use a Ten's Frame to Find the Missing Number

Start with 4 counters. You need 6 more to fill the frame. So, 4 + 6 = 10.



Different Ways to Make a Number

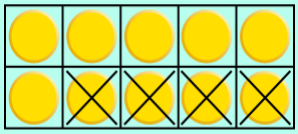
5 + 0 = 5 0 + 5 = 5
4 + 1 = 5 1 + 4 = 5
3 + 2 = 5 2 + 3 = 5



Solve Problems in Different Ways.

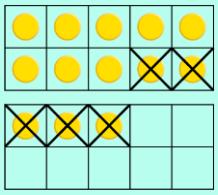
Ted has 10 stickers, he gives 4 to Mia. How many does he have now?

10 - 4 = 6



Explain Why Equations are True

Is 13 - 5 = 8 true? Start with 13 counters, remove 5 of them.



First Grade - Solve addition problems with sums between 0 and 20 & subtract using related facts. Students will develop an understanding of the relationship between addition and subtraction.

Add 3 Numbers

3 + 5 + 7

First add the 3 and 7 to make 10.
3 + 7 = 10

Then add 5.
10 + 5 = 15

So, 3 + 5 + 7 = 15.

Add and Subtract Real World Problems

Janine has 14 slices of cheese. She uses some of the slices to make sandwiches. She has 8 slices left. How many slices did she use?

Relationship between Addition and Subtraction

11 - 4 = ?
4 + ? = 11

Both equations have the same solution of 7. Subtraction can be written as addition.

Explain Why Equations are True

An equation has an equal sign and is true when both sides are equal.

$$\frac{6 + 7 = 8 + 5}{6 + 7 = 13}$$
8 + 5 = 13

Determine Unknown Whole Numbers

14 - ? = 5
One way to find the missing number is to use addition.

5 + 9 = 14

Second Grade - Solve addition problems with sums between 0 and 100 & related subtraction problems. Students will demonstrate an understanding of equality, addition, subtraction, and develop an understanding of multiplication.

Solve One- & Two-Step Addition and Subtraction

Marta picked 22 apples. Leon picked 5 fewer apples. How many apples did Marta and Leon pick?
22 - 5 = 17 apples Leon picked.
22 + 17 = 39 apples in all.

Determine Unknown Whole Number

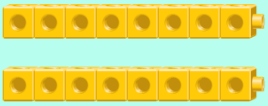
14 + 8 = ? - 6

Find the value of the side with no missing number.
14 + 8 = 22

What number can you subtract 6 from to get 22?
14 + 8 = 28 - 6

Even and Odd Number of Groups

Even Number:
16 = 8 + 8



Odd Number:
13 = 6 + 6 + 1

Repeated Addition to Find the Total in Equal Groups

An array has equal rows & equal columns.

4 + 4 + 4 = 12
3 + 3 + 3 + 3 = 12

Third Grade - Solve multiplication and division problems. Students will develop an understanding of equality, multiplication, division and identify numerical patterns, including multiplicative patterns.

Commutative Property

8 x 6 = 6 x 8

Associative Property

(7 x 2)x 5 = 7 (2 x 5)

Distributive Property

4 x 29 = 4 (20 +9)
4 x 29 = (4 x 20) + (4 x 9)

Solve Problems using any four Operations with Whole Numbers

Abby picked 80 strawberries and put 10 in each basket. Then she gave away 3 of the baskets of strawberries. How many baskets of strawberries does Abby have left?
The number of baskets Abby filled:
80 divided by 8 = 10, so Abby filled 8 baskets.
The number of baskets after Abby gave away 3 of them:
8 - 3 = 5.

Restate Division as a Missing Factor Using the Relationship between Multiplication and Division

60 divided by 12 = ?
12 x ? = 60
12 x 5 = 60, so 60 divided by 12 =5.

Determine whether a Multiplication or Division Equation is True or False

36 divided by 9 = 2 x 2
4 equals 4 so the two sides are equal.

4 x 3 = 48 divided by 6.
12 does not equal 8 so the two sides are not

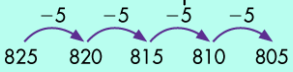
Determine the Unknown Whole Number in Multiplication or Division

Find the value of *a* in the multiplication equation.
6 x a = 54
6 x 9 = 54, so *a* equals 9.

Find the value of *m* in the division equation.
7 = 21 divided by *m*.
7 = 21 divided by 3, so *m* equals 3.

Identify, Create and Extend Numerical Patterns

What is the 6th number in this sequence? 825, 820, 815, 810, 805, ___.
Look for the pattern.



The pattern is to subtract 5. Then use the pattern to find the next number.

Determine if a Whole Number from 1 to 144 is a Multiple of a given 1 digit number.

6 x 1 = 6, 6 x 2 = 12, 6 x 3 = 18, 6 x 4 = 24, 6 x 5 = 30 etc.
To decide if a number is a multiple of 6, you can use multiplication or division.
72 is a multiple of 6
6 x 12 = 72 so 72 divided by 12 =6.

Odd and Even with Whole Numbers 1 to 1,000

When you count by 2's starting at 0, you can name even numbers: 0, 2, 4, 6, 8, 10, 12, 14 and so on. Even numbers can be divided by 2 with nothing left over.

When you count by 2's starting at 1, you name odd numbers: 1, 3, 5, 7, 9, 11, 13, 15 and so on. When you divide the odd number by 2, there is always a remainder of 1.

Fourth Grade - Represent and solve problems involving the four operations (addition, subtraction, multiplication, and division) with whole numbers and fractions. Students will demonstrate an understanding of equality, operations with whole numbers, and recognize numerical patterns, including patterns that follow a given rule.

Use Addition and Subtraction of Fractions with like Denominators, including Mixed Numbers and Fractions Greater than 1.

Marta jogged $2\frac{5}{8}$ miles on Saturday and $4\frac{1}{8}$ miles on Sunday. How far did she jog in all?

$2\frac{5}{8} + 4\frac{1}{8} = 6\frac{6}{8}$ Use addition to solve the problem. Marta jogged $6\frac{6}{8}$ Miles in all.

Solve Multiplication and Division of Whole Numbers, Including Remainders

At the flower market, Darrell sells 26 bouquets. There are 12 flowers in each bouquet. How many does he sell?

12 x 26 = 312

Solve Problems Involving Multiplication of a Fraction of a Whole Number

Tanya practiced piano 2/3 hour each day for a week. How many hours did Tanya practice piano?

$7 \times \frac{2}{3} = \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} = \frac{14}{3}$ or $4\frac{2}{3}$

Determine Whether an Equation (using any of the four operations) is True or False

60 divided by 5 = 2 x 6
12 equals 12, so the two sides are equal.

19 - 4 = 3 + 4 + 5
15 does not equal 12, so the two sides are not equal.

Write an Equation Involving Multiplication or Division to Determine the Unknown Whole Number

Charlie earned $20 babysitting for 4 hours. How much does Charlie earn each hour?

4 x *b* = 20
4 x 5 = 20, so *b* = 5.

Determine Factor Pairs for a Whole Number 0 to 144.

Factor pairs for 35: 1 and 35, 5 and 7
35 is a composite number because it has more than two factors (1, 5, 7, and 35).

Factor pairs for 17: 1 and 17
17 is a prime number because it only has two factors (1 and 17).

Generate, Describe, and Extend a Numerical Pattern that Follows a Given Rule

Use the rule "Subtract 3" to extend this pattern.

The next three numbers in the pattern are 9, 6, and 3. One way to describe this pattern is to say that all the numbers are multiples of 3.

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Measurement

Measurement can determine the height, length, and width of objects as well as the area they cover, the volume they hold, and other characteristics. We also measure time and money. Developing the ability to estimate and to measure accurately takes time and practice.

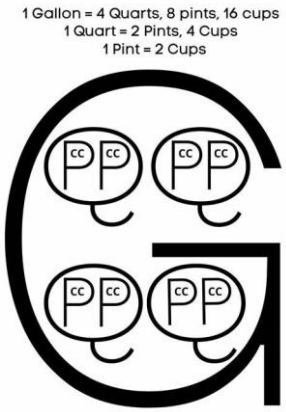
1ST	• Length of an object to the nearest inch or centimeter.
2ND	• Length of an object to the nearest inch, foot, yard, centimeter, or meter.
3RD	• Length of an object to the nearest centimeter and half or quarter inch. • Volume of a liquid within a beaker to the nearest milliliter and half or quarter cup. • Temperature to the nearest degree.
4TH	• Length of an object. • Volume of a liquid within a beaker. • Weight of an object. • Mass of an object. • Temperature of an object.

In the Kitchen

Let your child help to measure ingredients for a recipe! Review equivalent measurements.

Sidewalk Chalk

Draw a variety of shapes with chalk. Have your child use measuring tapes or rulers to practice taking measurements.



Measurement Activities

- Make comparisons: Compare two objects by weight, size, and height. Ask questions like: "Is there more water in this cup or that cup?" "Which book is heavier?"
- Measure items found around the house. Have your child find objects that are longer or shorter than a shoe, a string, or a ruler. Together, use a shoe to measure the length of a floor mat. 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 your front door to the edge of your yard, then walk with your child to find out how many there really are, counting the steps as you go.
- In the kitchen: Let your child help to measure ingredients for a recipe.
- Whenever you gather ingredients, ask children to make a hypothesis about weight. "Which one is heavier, the onion or the can of soup".
- Take cereal boxes or cans of vegetables from the cupboard and have your child line them up from tallest to shortest.
- Make comparisons by more than/less than, bigger/smaller, near/far, over/under in informal ways throughout the day.
- Trade equal amounts of money. How many pennies do you need to trade for a nickel? For a dime?
- Let your child make meaningful and helpful measurements in standard (centimeter, meter, etc.) and non-standard (child's footsteps, blocks, cubes, etc.) units.
- Create an original schedule for your everyday activities. Draw clocks to show the times for each event.

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Geometric Reasoning

The ability to identify and describe shapes, sizes, positions, directions, and movement is important in many work situations, such as construction and design as well as in creating and understanding art. Becoming familiar with shapes and special relationships in their environment will help children grasp the principles of geometry in later grades.

Geometric Reasoning Activities

- Identify shapes and sizes. When playing with your child, identify things by their shape and size, "Take the largest cereal box out of the cupboard".
- Build structures using blocks or old boxes. Discuss the need to build a strong base. Ask your child which shapes stack easily and why.
- Hide a toy and use directional language to help your child find it. Give clues using words or phrases such as up, down, over, under, between, through, and on top.
- Play "I Spy", looking for different shapes. Help your child recognize and identify real-world examples of 2 Dimensional and 3 Dimensional shapes. Look for shapes in your home, neighborhood, playground, etc. (Examples: Our house has a rectangular door or our windows are square).
- Ask your child to draw a picture of your street, neighborhood or town. Talk about where your home is in relation to a neighbor's home or the corner store. Use directional words and phrases like beside and to the right of.
- Go on a "shape scavenger hunt". Have your child look for as many circles, squares, triangles, and rectangles as they can find in your home or outside. Do the same with three-dimensional objects like cones, cubes, spheres, and cylinders.
- Tape Angles: Use masking tape or painters tape to create intersecting lines on a wall or create a smaller version on a piece of paper. Then measure and compare the various angles that you have created.

Common Household Items
Use items like toothpicks, marshmallows, sticks, paper, etc., to construct shapes.

Parents' Math-At-Home Plan for Student Success

Data Analysis and Probability

Students should be able to formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.

In grades K-2, every student should be able to

- Pose questions and gather data about themselves and their surroundings
- Sort and classify objects according to their attributes and organize data about the objects
- Represent data using concrete objects, pictures, and graphs

In grades 3-4, every student should be able to:

- Design investigations to address a question and consider how data-collection methods affect the nature of the data set
- Collect data using observations, surveys, and experiments
- Represent data using tables such as line plots, bar graphs, and line graphs
- Recognize the differences in representing categorical and numerical data

Data Analysis and Probability Activities

- Take a family survey. At the end of the day, take a survey of how the day went for each member of the family. Before watching something together, survey members to see what they want to watch. These simple activities can get your family talking, while also promoting data collection, counting, and comparison skills.
- Create a survey question and collect data from friends and family in a tally chart. Example of survey question could include: What is your favorite food?
- Graphing Candy: Open a pack of M&M's, Skittles, or Jelly Beans and make a bar graph showing the number of each color found inside the pack.
- Graphing Sports: Track the scores of games played by your child's favorite team, then graph them over a period of several weeks.

Parents' Math-At-Home Plan for

Student Success

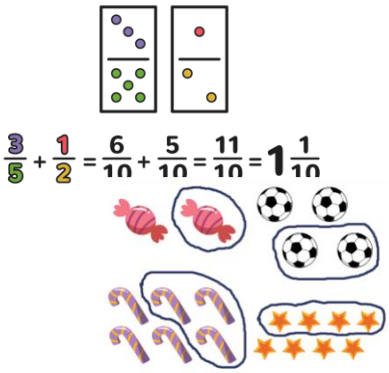
Fractions

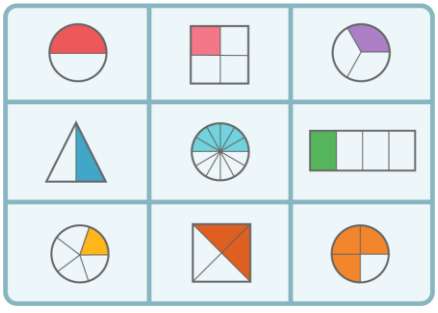
As adults, we use fractions every day - dividing a pizza, telling the time, and splitting the bill. Children understand fractions better when they are used in a real life context such as length, time, money, and weight. They learn fractions better by using models, which gives them a visual representation.

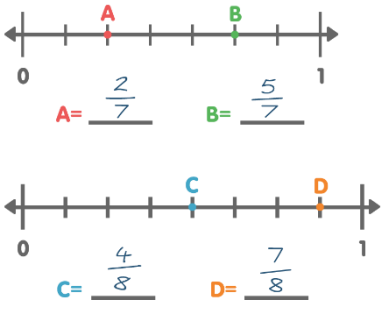
Students use area models to see how much of the whole each fraction takes up. Using sets of objects is another way of teaching fractions and circling half of the objects. Number lines help students to see fractions as numbers that are between whole numbers.

Fractions Activities

- Cut food into equal pieces. Point out halves, thirds, quarters, etc. Help establish the concept that ¼ of a piece of chocolate bar is smaller than ¼ of a piece.
- Playdough Fractions: Create a shape like a circle or a square from a piece of playdough. Then practice dividing it into halves, thirds, and fourths.
- War Card Game with Fractions: Have students deal two cards - a numerator and a denominator and determine whose fraction is the largest. The winner keeps all four cards and play continues until the cards are gone.
- Multiplying domino Fractions: Dominoes are ready-made fractions! Multiply, add, subtract, or divide the dominoes and reduce the results.







Parents' Math-At-Home Plan for

Student Success

Resources for Parents

Math Begins at Home - Strong parental involvement is a key component to student success! Building early math skills is a key part of learning critical thinking and problem solving for young children. Incorporating math language and reasoning in routine communication with children builds important problem-solving and critical thinking skills. Don't forget to be be positive and supportive. If you demonstrate a positive attitude toward math, your children are more likely to have a positive attitude as well. Try not to show negative opinions about math. Believe in your child's success! Tell them it might take time to solve the problem, but they can do it! Ask them about school and encourage them to talk about their day. Have a conversation with your child about where they see math in the world around them by pointing out and asking them about the numbers, patterns, shapes, angles, etc.

Set a Math Reading Time - Set aside time every week to read a math story rather than a traditional story. Make sure it is interesting that engages the read and provokes mathematical thinking. Ask questions about counting, comparing, finding totals and differences, looking at patterns or shapes, etc. Take a trip to the local library. There are so many Math books that are perfect for at home reading. Some examples of Math books are on page 24 of this Math-at-Home Plan.

Family Game Night - Designate a night as Family Game Night. Play board games or other games that use number cubes (dice), card games, dominoes, puzzles, tangrams, etc. to incorporate math strategies and skills. Some examples of games can be found on page 23 of this Math-at Home Plan.

Be Involved in their Homework & Make a Routine - Read word problems together and discuss them. Use different words to explain the problem. Ask them what the first step to solve the problem could be? If you can, designate a specific time each night to work on math homework. Stay involved and contact your child's teacher with any questions or concerns.

Manipulatives & Materials at Home

Other items to have available around the house: Playing Cards, Measuring Tape, Ruler, Scale, Measuring Cups, Beans, etc.

DICE	Dice can be used to practice all operations. Roll the dice to practice addition, subtraction, multiplication, or division. They could also be used to create fractions. Examples: Roll the dice to create the problem, then solve: __ + __ = __
MENUS, ADS OR CATALOGS	Whether you find these items online or have them at home, they can be used to practice addition, decimals, budgeting, and percent.
PAPER PLATES	These are great to use when students are working with fractions. They can color and cut them to create circle fraction parts.
COINS	Coins are perfect in the younger grades for skip counting. These can also help with upper elementary students with their multiples and working with decimals.
BUTTONS OR BEADS	Students in the primary grade levels can use buttons or beads for sorting and finding patterns. They can look at the colors, sizes, texture, or shapes of them.
LEGO BLOCKS	Legos can be used when working with fractions as a visual model.
PLAYDOUGH	Playdough can be used to make arrays and fraction models along with modeling all operation word problems (addition, subtraction, multiplication, or division). Lower elementary can also use playdough to create 2 Dimensional and 3 Dimensional shapes.
FRUIT OR BALLS	Children can collect different sized balls or fruits and measure each items length, width, height, and overall weight.

Online Resources

PBSKIDS	• Hands-on activities, videos and games with a mathematical focus featuring your favorite PBS characters! • PBS KIDS • Grocery Bingo: PC_Grocery_Bingo_RI.indd (pbskids.org)

ABCYA 	• A great way for students to practice their number sense and operations through educational games and resources. • ABCya! · Learning Games and Apps for Kids
IXL 	• Math skills, lessons, and games offered to help children explore and learn. • IXL - Sumter County Schools
XTRAMATH 	• An online math fact fluency program that helps students develop quick recall and automaticity of basic math facts. • XtraMath - 10 minutes a day for math fact fluency
REFLEX MATH 	• Helps to develop fluency with basic facts in addition, subtraction, multiplication, and division. • Reflex	Math Fact Fluency: Helping Students Master Math Basics (reflexmath.com)
GENERATION GENIUS 	• Videos, quiz games, articles, and math practice problems. • Generation Genius	The Next Generation in Science Videos
STARFALL 	• Interactive games, songs, and supporting resources for math. • Starfall Education: Kids Games, Movies, & Books K-3
SPLASH MATH 	• A collection of fun and interactive math problems. • https://www.splashlearn.com/
PRODIGY 	• An interactive program to practice math through fun and adaptive learning games. • Free Math Learning Game for Kids	Prodigy Education (prodigygame.com)

Math Games

Math Games are a useful way to learn or practice mathematical concepts in a natural and enjoyable manner. Below are a couple of games and how to play. Other great games for math practice include Monopoly, Uno, Yatzee, etc.

GAME	Number of Players	Materials	How to Play
COMBO *THIS GAME IS PLAYED IN MATH LEAGUE*	2-5	Numbered Cards 1-10 or 1-15	1. Each player will receive 5 cards face down. 2. The dealer will flip the top card from the deck to be the target number. 3. Players will flip their five cards over. You can only add, subtract, multiply, or divide to get the target number. 4. The first player to declare "COMBO" will correctly explain their hand. Once they begin to explain, they may not stop or start over. 5. If successful, the 5 cards will be totaled and the score will be recorded as a positive number. If unsuccessful, the 5 cards will be totaled and the score will be recorded as a negative number (total score may not go below zero). The other players will continue to play.
CARD DOMINOES	3-4	Playing cards Ace-10	1. Deal all the cards to the players. 2. The players who have 1's (aces) put them down in a column in the middle of the table. 3. Decide who will go first, second, and third. 4. Players take turns putting down one card at a time to continue each line as above with the next number in the sequence. 5. Anyone who does not have a card, can pass. The first player to lose all their cards wins. Game can be modified by starting the game at 10 and work backwards (10, 9, 8...)
DOUBLE WAR TO TEN	2-4	Deck of Cards	1. All the cards are dealt so that each player has two stacks placed face down. 2. Without looking, each player turns up the top two cards in their pile.

			3. The player whose total is the highest takes all cards played. If the sums are equal, players keep their own cards. 4. All players must agree on the totals before anyone takes the cards for that round. 5. The player who has the most cards in the end is the winner.
VARIATION OF WAR	2-4	Deck of Cards	1. Play a variation of war. 2. Subtract the lower number from the higher number. 3. The player who won that play, wins those points.
ADDITION	1	Deck of Cards	1. Grab a deck of cards, pick out all of the numbers 1-10 and shuffle them. 2. Have your child pull out two at a time and add the numbers together!
PLACE VALUE DICE	1	Dice	1. Roll 3 dice, create a 3-digit number and write it down. 2. Repeat these steps. 3. Compare the two numbers and decide which is greater.

Math Picture Books by Topic

COUNTING BOOKS/NUMBER SENSE	• 1, 2, 3 to the Zoo by Eric Carle • The 100th Day of School by Angela Medearis • Lemonade in Winter: A Book About Two Kids Counting Money by Emily Jenkins • How Many Seeds in a Pumpkin by Margaret McNamara • Zero by Kathryn Otoshi • Zero the Hero by Joan Holub • Two of Everything by Lily Toy Hong • Lifetime: The Amazing Numbers in Animal Lives by Lola M. Schaefer • Each Orange Had 8 Slices by Paul Giganti Jr.
ADDITION/SUBTRACTION	• Five Little Monkeys Jumping on the Bed by Eileen Christelow (Addition/Subtraction) • Rooster's Off to See the World by Eric Carle (Addition and Subtraction) • A Fair Share Bear by Stuart Murphy (Addition)
FRACTIONS	• Give Me Half! By Stuart Murphy

	• Full House by Dayle Dodds
TIME	• The Grouchy Ladybug by Eric Carle • A Second is a Hiccup by Hazel Hutchins
DATA	• Tally O'Malley by Stuart Murphy
ALGEBRA	• Safari Park by Stuart Murphy • One Hundred Hungry Ants by Elinor Pinczes
PLACE VALUE	• Earth Day Hooray! By Stuart Murphy
MULTIPLICATION	• Spaghetti and meatballs for All by Marilyn Burns
DIVISION	• A Remainder of One by Elinor Pinczes
PERIMETER	• Chickens on the Move by Pam Pollack
MEASUREMENT	• How Much, How Many, How Far, How Heavy, How Long, How Tall is 1,000? By Helen Nolan • How Long or How Wide: A Measuring Guide by Brian P. Cearly • Round Trip by Ann Jonas
PROBLEM SOLVING	• The Math Curse by Jon Scieszka
ANGLES	• Sir Cumference and the Great Knight of Angleland by Cindy Neuschwander
MONEY	• Alexander, Who Used to Be Rich Last Sunday by Judith Viorst
SHAPES	• The Greedy Triangle by Marilyn Burns

Standards at a Glance & Instructional Focus

Kindergarten	Students will focus on developing an understanding of counting, addition and subtraction, and measuring comparing, and categorizing objects including 2D and 3D shapes. • Count and compare objects in a set up to 20 • Recite numbers to 100 by ones and tens • Addition and subtraction of whole numbers 0-10 with drawings and equations • Compare objects through measurement • Measure with non-standard units (paperclips) • Identify 2D and 3D figures • Sort objects into categories
1st Grade	Students will focus on understanding place value of tens and ones, extending the understanding of addition and subtraction, developing an understanding of measurement, money, and time, and categorizing geometric figures. • Place value of two-digit numbers

	• Recite numbers to 120 forward and backward • Addition and subtraction of whole numbers 0-20 with drawings and equations • Addition of 2-digit numbers with sums to 100 • Compare objects through measurement • Measurement with inches • Identify 2D and 3D figures • Partitioning shapes into halves and fourths • Time to the hour and half-hour • Coin identification
2nd Grade	Students will focus on understanding place value in three-digit numbers, building fluency and algebraic reasoning with addition and subtraction, extending understanding of measurement, time, and perimeter, and developing special reasoning with 2D figures. • Place value of three-digit numbers • Solve one and two step word problems • Addition and subtraction facts with sums to 20 with automaticity • Addition of 2-digit numbers with sums to 100 with procedural reliability • Identify lines of symmetry • Estimate and measure length • Perimeter • Compare numbers up to 1,000 • Partitioning shapes into halves, thirds, and fourths • Time to the nearest 5 minutes • Real world money application problems
3rd Grade	Student will focus on adding and subtracting multi-digit whole numbers, building an understanding of multiplication and division, developing an understanding of fractions, and extending geometric reasoning to lines and quadrilaterals. • Place value of four-digit numbers • Compare numbers up to 10,000 • Add and subtract multi-digit numbers • Multiply numbers with products 0-144 and explore related division facts • Perimeter and area • Order and compare fractions • Identify equivalent fractions • Solve problems involving: length, mass, weight, temperature, and liquid volume • Time to the nearest minute

	• Elapsed time • Classify quadrilaterals • Identify relationships between lines • Time to the nearest 5 minutes
4th Grade	Students will focus on extending the understanding of multi-digit multiplication and division, developing the relationships between fractions and decimals, classifying and measuring angles, and developing an understanding for interpreting data to include mode, median, and range. • Place value of multi-digit numbers • Compare numbers up to 1,000,000 • Operations with multi-digit numbers including decimals • Understanding the relationship between fractions and decimals • Add, subtract and multiply fractions • Solve problems with a whole number and fractions using the four operations • Numerical patterns following a rule • Solve problems involving: length, mass, weight, temperature, and volume • Draw, classify, and measure angles • Perimeter and area of rectangles • Collect and interpret data • Find mode, median, and range of a data set • Solve two-step real world problems involving money and time

Standards at a Glance & Instructional Focus

Florida's B.E.S.T. Standards - The Florida Benchmarks for Excellent Student Thinking (B.E.S.T.)
Standards: Parent Guide for Grade Level Mathematics
Math 'Best Standards - mathbeststandardsfinal.pdf
National Council of Teachers of Mathematics
Savvas Family Engagement Access by Grade Level
Kindergarten
First Grade
Second Grade
Third Grade
Fourth Grade