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ABSTRACT

This document consists of a sample curriculum model for grade 3 mathematics based on the 1998 Arkansas State Mathematics Framework. The document is divided into five sections: (1) Number Sense, Properties, and Operations; (2) Geometry and Spatial Sense; (3) Measurement; (4) Data Analysis, Statistics, and Probability; and (5) Patterns, Algebra, and Function. Within each section the standards are exemplified and articulated by benchmarks, suggested assessments, and possible strategies and activities for teaching the standard. A blackline master checklist is included as an appendix. (MM)

SAMPLE CURRICULUM MODEL

GRADE 3

based on the 1998 Arkansas State Mathematics Framework
Arkansas Department of Education, 1998

Grade Level_3_
NUMBER SENSE, PROPERTIES, AND OPERATIONS

Standard NPO.1.0	Benchmarks	Assessments	Strategies/Activities
SLE NPO.1.1 Demonstrate number sense (concepts of counting, grouping, and place value) using manipulatives.	Students will construct items to represent place value using manipulatives. Students will develop the concept of place value up to hundred thousands.	. Teacher observation . Peer and self evaluation . Teacher-made tests . Checklist . State-wide test . Perform-ance	. Read: Twelve Days of Christmas by Kent, Jack. . Students will represent multi-digit numbers using base ten blocks or other manipulatives, such as popsicle sticks or cotton swabs. . Each student will have a number which has been written on a paper plate taped to their back. The number is unknown to the students upon whose back it is attached. The teacher calls students up to the front of the room and has them face their backs to the class. The class reads aloud the number formed by the students. The students that are standing at the front of the room alternate guessing their digit and the value of the place after hearing the number formed by the students.
SLE NPO.1.2 Develop meaning for the operations (e.g., add, subtract, multiply, and divide) by modeling and discussing a variety of problem situations.	Students will discuss and model (concretely, pictorially, and symbolically) problem situations involving: 3- or more digit addition and subtraction; basic multiplication to 10 (repeated additon, array/area, combinations/Cartesian products) and division to	. Teacher observation . Peer and self evaluation . Teacher-made test . Checklist . Appro-priate response to teacher	. Read: The Doorbell Rang by Hutchins, Pat; Bunches and Bunches of Bunnies by Mathews, Louise; A Grain of Rice by Pittman, Helena Clare. . Students prove their paper-pencil and mental math answers by writing the process of computation.

	10 (measurement, partitioning): multiplication of a multi-digit number by a single-digit number with and without regrouping; and dividing a multi-digit number by a single-digit number with and without a remainder.	direct questions . Improved vocabulary . Verbal explanation . Demon-stration . Writing	. Students discuss and model the concept of multiplication and division using base ten blocks and other manipulatives. They discuss problem situations involving multiplication and division and the relationship of multiplication to addition.

Grade Level_3_
NUMBER SENSE, PROPERTIES, AND OPERATIONS

Standard NPO.1.0	Benchmarks	Assessments	Strategies/Activities
SLE NPO.1.3 Apply and master counting, grouping, place value, and estimation.	Students will apply and master the concept of place value up to hundred thousands. Students will estimate to the nearest tens, hundreds, and thousands using rounding and truncating strategies.	. Teacher observation . Peer and self evaluation . Teacher-made tests . Checklist . State-wide test . Perform-ance	. See NPO.1.1 . Students estimate the number of students in the third grade. They use the actual amount to round and truncate for assessing the correctness of their estimation.
SLE NPO.1.4 Solve problems using terminology and symbols of operations (e.g., add, subtract, multiply, and divide).	Students will concretely, pictorially, and symbolically represent problem solving situations involving basic multiplication and division and will relate mathematical terminology (sum, difference, dividend, divisor, quotient, etc.) to said problem solving situations.	. Teacher observation . Peer and self evaluation . Teacher-made test . Appro-priate response to teacher direct questions . Verbal explanation . Anecdo-tal records . State-wide test . Writing	. See NPO.1.2 . Students will label mathematical problems with appropriate terms. . Students will represent problem solving situations in numbers and symbols.

Grade Level_3_
NUMBER SENSE, PROPERTIES, AND OPERATIONS

Standard NPO.1.0	Benchmarks	Assessments	Strategies/Activities
SLE NPO.1.5 Demonstrate competency of operations (e.g., add, subtract, multiply, and divide) using mental math and technology.	Students will demonstrate competency with basic multiplication and division facts (1's - 10's) using mental math and technology.	. Teacher observation . Peer and self evaluation . Teacher-made tests . State-wide test . Perform-ance . Appro-priate response to teacher direct questions	. Extend NPO.1.2 to have students check their answers using calculators. . Students will use appropriate computer software such as Balancing Bear K-4 by Marshall & Assoc., The Pond by Sunburst, and Sidewalk Sneakers by Sunburst. . Students will view appropriate videos. . Play games that enhance mental math, such as "Around the World".
SLE NPO.1.6 Use manipulatives to demonstrate and compare rational numbers/fractions (e.g., find simple parts of a whole).	Students will concretely, pictorially, and symbolically demonstrate and compare fractions (identify the numerator and denominator; write mixed numbers; recognize equivalent fractions; compare fractions with like denominators).	. Teacher observation . Peer and self evaluation . Teacher-made test . Appro-priate response to teacher direct questions . Verbal explanation . State-wide test . Demon-stration	. Students will label fractions correctly. . Students use fraction bars or rods to demonstrate and compare fractions. (For example: Represent the fractions 2/3 and 1/3 with fraction bars and determine which is greater; Represent the fractions ½ and 3/6 to represent equal fractions; Represent the fraction 4/3 and regroup the manipulatives to represent 1 1/3.)

Grade Level_3_
NUMBER SENSE, PROPERTIES, AND OPERATIONS

Standard NPO.1.0	Benchmarks	Assessments	Strategies/Activities
SLE NPO.1.7 Communicate understanding of number sense, properties, and operations through journal writing, creating problems, constructing mathematical sentences, etc.	Students will communicate understanding of number sense, properties, and basic multiplication and division through journal writing, creating problems, constructing mathematical sentences, etc.	. Teacher observation . Peer and self evaluation . Teacher-made tests . State-wide test . Appro-priate response to teacher direct questions . Anecdo-tal records . Verbal explanation . Journal . Improved vocabulary . Writing	. See NPO.1.1, NPO.1.2, NPO.1.3, NPO.1.4, NPO.1.5, NPO.1.6 . Students compose a math story using correct number sense, properties, and basic multiplication and division. The story is recorded in their journal.

Standard NPO.2.0	Benchmarks	Assessments	Strategies/Activities
SLE NPO.2.1 Represent numbers and operations (addition, subtraction, multiply, and divide) in a variety of forms using manipulatives, symbols, and graphs (pictographs, etc.).	Students will represent numbers, 2- and 3-digit addition with carrying, 2- and 3-digit subtraction with regrouping, and basic multiplication and division through 10's in a variety of forms using manipulatives, symbols, and graphs.	. Teacher observation . Peer and self evaluation . Teacher-made tests . State-wide test . Appropriate response to teacher direct questions . Demonstration	. See NPO.1.1, NPO.1.2, NPO.1.3, NPO.1.5, NPO.1.6 . Read: The Great Take-Away by Mathews, Louise.
SLE NPO.2.2 Apply elementary number theory (skip counting, patterns, number series, odd and even numbers, multiples, fractions, etc.).	Students will apply elementary number theory (skip counting, patterns, number series, odd and even numbers, multiples, Roman numerals from 1-20, rounding to the nearest tens, hundreds, and thousands, etc.).	. Appropriate response to teacher direct questions . Teacher observation . Peer and self evaluation . Teacher-made test . State-wide test . Performance	. Read: The 329th Friend by Sharmat, Marjorie Weinman; Hundred Penny Box by Mathis, Sharon Bell; Math for Smarty Pants by Burns, Marilyn. . Students find example of the use of number theory in the real-world. (Ex. Even numbered houses on one side of the street and odd numbered houses on the other; Roman numerals on movies and clocks/watches; prices raised to the nearest ten or hundred dollars to allow for tax.)

Standard NPO.2.0	Benchmarks	Assessments	Strategies/Activities
SLE NPO.2.3 Apply computation (add, subtract, multiply, and divide) and estimation to real-world problems.	Students will apply basic multiplication (variety of meanings), basic division (variety of meanings), and estimation to real-world problems.	. Teacher observation . Peer and self evaluation . Teacher-made tests . State-wide test . Anecdotal records . Writing	. See NPO.1.2 . Students estimate and determine the cost of a single unit when a group of units are sold for one price. (Ex.: How much does one egg out of a dozen cost, if the dozen costs $2.34?)
SLE NPO.2.4 Use mental math, manipulatives, and technology to solve problems.	Students will use mental math, manipulatives, and technology to solve basic multiplication (variety of meanings) and division (variety of meanings) problems, 2- and 3-digit addition problems (with carrying), and 2- and 3-digit subtraction (variety of meanings) problems (with regrouping).	. Teacher observation . Peer and self evaluation . Teacher-made test . State-wide test . Project	. See NPO.1.2, NPO.1.5, NPO.2.1 . Students are asked to solve a number of basic multiplication and division problems, 2- and 3-digit addition problems, and 2- and 3-digit subtraction problems either mentally or with manipulatives. They check their answers using a calculator.

Standard NPO.2.0	Benchmarks	Assessments	Strategies/Activities
SLE NPO.2.5 Describe and compare quantities by using concrete and real-world models of fractions.	Students will describe quantities by using concrete and real-world models of fractions and will compare concrete and real-world models of fractions with like denominators.	. Teacher observation . Peer and self evaluation . Teacher-made tests . State-wide test . Anecdotal records . Verbal explanation . Journal . Appropriate response to teacher directed questions . Improved vocabulary . Demonstration . Exhibition	. See NPO.1.6

Grade Level_3_
GEOMETRY AND SPATIAL SENSE

Standard GS.1.0	Benchmarks	Assessments	Strategies/Activities
SLE GS.1.1 Sort, classify, and construct geometric shapes/figures and objects using a variety of manipulatives.	Students will classify shapes/figures in terms of geometric relationships. Students will construct two-dimensional geometric shapes using a variety of manipulatives and will sort and classify three-dimensional shapes. Students will develop the concept of faces, edges, and vertices of geometric solids.	. Teacher observation . Peer and self evaluation . Teacher-made tests . State-wide test . Demon-stration . Project	. Students will identify and create two-dimensional shapes using cookie cutters. . Students will identify the shapes of food packaging (cans are cylinders; boxes are rectangular prisms; etc.). They will identify the faces, edges and vertices of the packages.
SLE GS.1.2 Describe, model, draw, construct, compare and classify shapes on one, two, and three dimensions.	Students will compare and classify shapes in one dimension. Students will compare and classify shapes in two and three dimensions.	. Teacher observation . Peer and self evaluation . Portfolio . State-wide test . Demon-stration . Teacher-made test	. See GS.1.1 . Read: Three-D, Two-D, One-D by Adler, David; Pyramid by Macaulay, David. . Students will design and build a gift box.

Grade Level_3_
GEOMETRY AND SPATIAL SENSE

Standard GS.1.0	Benchmarks	Assessments	Strategies/Activities
SLE GS.1.3 Determine the relationship between shapes/figures using congruence and similarity, and using transformations (flips, slides, and rotations).	Students will classify figures in terms of similar and congruent. Students will predict results of slides, flips, and turns.	. Teacher observation . Peer and self evaluation . Teacher-made tests . State-wide test . Portfolio	. Students will use paper folding to identify similar and congruent properties. . Students work jigsaw puzzles to reenforce the concept of slides, flips, and turns.
SLE GS.1.4 Predict and determine the results of combining, dividing, and subdividing shapes/figures.	Students will predict and determine the results of combining and dividing shapes/figures.	. Teacher observation . Peer and self evaluation . Portfolio . State-wide test . Project	. Read: Grandfather Tang's Story by Tompert, Ann. . Students will design the figures in the book and will form original pictures using tangrams. . Students will design and make a quilt with 3 or more particular shapes.

Standard GS.1.0	Benchmarks	Assessments	Strategies/Activities
SLE GS.1.5 Demonstrate spatial awareness (positional relationship, size, direction, area, volume, etc.)	Students will demonstrate spatial awareness (positional relationship, size, direction, area, volume, etc.).	. Teacher observation . Peer and self evaluation . State-wide test . Appro-priate response to teacher direct questions . Demon-stration	. Read: A Lion in the Night by Allen, Pamela. . Around the room are placed several different block arrangements. The students are to rotate around the room and determine the number of blocks used to make each design. (The blocks cannot be touched or moved.) . Students are instructed on seeing different views of a three-dimensional structure (e.g., top, bottom, side, etc.). They are to match the different views of the prearranged block structures with the actual block arrangements. This can be extended by having the students arrange the blocks using the views.
SLE GS.1.6 Use manipulatives and technology to demonstrate geometric concepts (positional relationship, size, direction, area, volume, etc.).	Students will use manipulatives and technology to demonstrate geometric concepts (positional relationship, size, direction, area, volume, etc.).	. Teacher observation . Peer and self evaluation . State-wide test . Teacher-made test . Demon-stration	. Students use appropriate computer software such as The Factory by Sunburst and Super Factory by Sunburst. . See GS.1.1, GS.1.2, GS.1.3, GS.1.4, and GS.1.5

Grade Level_3_
GEOMETRY AND SPATIAL SENSE

Standard GS.1.0	Benchmarks	Assessments	Strategies/Activities
SLE GS.1.7 Demonstrate geometric and spatial sense through written and oral communication (e.g., draw and describe a color cube model using isometric dot paper).	Students will demonstrate geometric and spatial sense by drawing a two-dimensional representation of a three dimensional object.	. Teacher observation . Peer and self evaluation . State-wide test . Appro-priate response to teacher direct questions . Verbal explanation . Improved vocabulary . Portfolio . Teacher-made test . Writing	. Students draw nets (plans) for three-dimensional objects.

Standard GS.2.0	Benchmarks	Assessments	Strategies/Activities
SLE GS.2.1 Estimate and measure the size of geometric figures/shapes in the real world (length, width, perimeter, area, volume, etc.).	Students will estimate and measure the size of geometric figures/shapes in real world using standard units (length, width, perimeter, area, volume, etc.).	. Teacher observation . Peer and self evaluation . State-wide test . Teacher-made test . Anecdotal record . Performance . Log or journal	. Identify various objects in the classroom that represent geometric shapes and determine their size (length and width) using standard units of measure. (Ex. The front of a book represents a rectangle or a square. The students estimate then measure the length and width. They use these measurements to calculate the perimeter and area.)
SLE GS.2.2 Construct and explain geometric patterns using concrete and pictorial models with one or more attributes (color, shape, size, etc.).	Students will construct and explain geometric patterns using concrete and pictorial models, with two attributes.	. Appropriate response to teacher direct questions . Verbal explanation . Teacher observation . Peer and self evaluation . Improved vocabulary . State-wide test . Demonstration . Project	. Extend GS.1.4 to have students study different quilts in order to determine the patterns. . Students will identify different geometric patterns in real life surroundings.

Standard GS.2.0	Benchmarks	Assessments	Strategies/Activities
SLE GS.2.3 Use manipulatives and technology to solve problems involving perimeter, area, volume, etc.	Students will use manipulatives and technology to solve problems (perimeter, area, volume).	. Teacher observation . Peer and self evaluation . State-wide test . Teacher-made test . Anecdotal record . Performance	. See GS.1.6 and extend GS.2.2 to allow students to use calculators to help compute the perimeter and area of the book cover. . Use appropriate computer software.
SLE GS.2.4 Illustrate geometric concepts through written and oral communication. (For example, "I am a rectangular house. My windows are squares. My door is a rectangle. My roof is a triangle.")	Students will demonstrate geometric and spatial sense by drawing a two-dimensional representation of a three-dimensional object as represented in real life.	. Appropriate response to teacher direct questions . Verbal explanation . Teacher observation . Peer and self evaluation . Improved vocabulary . State-wide test . Teacher-made test . Writing	. See GS.2.1, GS.2.2, and GS.2.3 Students will verbalize or write their answers to the teacher's questions. The written answers will placed in their portfolios. . Students write shape poems.

Standard M.1.0	Benchmarks	Assessments	Strategies/Activities
SLE M.1.1 Demonstrate and apply the concept of comparison (large, small, long, short, etc.) according to given attributes (length, capacity, weight, mass, etc.).	Students will demonstrate and apply the concept of comparison (longer, shorter, holds more, covers more space, farther around, cost more) according to six or more attributes (color, shape, size, purpose, texture, weight, temperature, etc.).	. Teacher observation . Peer and self evaluation . Appropriate response to teacher direct question . Verbal explanation . Improved vocabulary . State-wide test . Teacher-made test . Anecdotal records	. Read: How Big Is a Brachiosaurus? Fascinating Facts About Dinosaurs. by Carroll, Susan. . Students are shown to glasses that have the same capacity but have different shapes, colors, sizes, purposes, textures, and weights (ex. 8 oz. Perfume bottle and an 8 oz. Soda pop bottle), then verbalize or write the similarities and differences of the two bottles.
SLE M1.2 Select, demonstrate, and defend the use of appropriate units of measure.	Students will select, demonstrate, and defend the use of appropriate units of measure for length (inches, feet, meter, centimeters, yards, 1/4 inch), capacity (liters, etc.), area (square inches, square feet, square meters, square centimeters, square yards), and time (5-minute intervals and hours).	. Teacher observation . Peer and self evaluation . Verbal explanation . Appropriate response to teacher direct questions . Improved vocabulary . Anecdotal records . Checklist . State-wide test . Teacher-made test . Writing	. Extend GS.2.1 to have students measure to the nearest 1/4 inch and centimeter. Students identify the unit of measure used. . Students measure a ½ gallon of milk in metric units. They defend and explain why the chose the metric unit used. . Students approximate and time how long it takes them to get ready for school each day.

Standard M.1.0	Benchmarks	Assessments	Strategies/Activities
SLE M.1.3 Convert from one measurement to another within the same system (feet to yards, centimeters to meters, etc.).	Students will convert from one unit of measurement to another in money (all coins and bills), time (60 minutes = 1 hour), and linear measure (12 inches = 1 foot; 100 centimeters = 1 meter; 1 yard = 36 inches; 1 yard = 3 feet).	. Teacher observation . Peer and self evaluation . Appropriate response to teacher direct question . Verbal explanation . Improved vocabulary . State-wide test . Demonstration . Teacher-made test	. See M.1.2 . Purchase items from the sales paper in the newspaper when allotted $50.00. (Change is calculated after each purchase.) . Students determine how many hours a day they spend in school and convert the total hours to minutes. . Students determine how many inches and centimeters tall they are. They convert the inches to feet and yards and centimeters to meters.

Standard **M.2.0**	Benchmarks	Assessments	Strategies/Activities
SLE **M.2.1** Select and use appropriate standard (inches, feet), non-standard (paper clip, thumbnail), and metric (centimeter, meter) measuring instruments (e.g., rulers, scales, measuring tape, yard stick, meter stick, thermometer, etc.).	**Students will use appropriate standard and metric measuring instruments (thermometer for temperature, ruler for length or width, etc.).**	**. Teacher observation . Peer and self evaluation . State-wide test . Demon-stration . Teacher-made test . Checklist . Anecdo-tal records**	**. See M.1.1, M.1.2, and M.1.3**

Grade Level_3_
MEASUREMENT

Standard M.3.0	Benchmarks	Assessments	Strategies/Activities
SLE M.3.1 Estimate and measure quantities such as weight, length, area, volume, money, time, and temperature.	Students will measure quantities in standard units (inches, feet, meters, yards, centimeters, meters, hours, minutes, cups, pints, quarts, gallons, liters).	. Teacher observation . Peer and self evaluation . State-wide test . Demon-stration . Teacher-made test . Checklist . Anecdo-tal records . Appro-priate response to teacher direct questions . Log or journal	. Extend M.2.1 by having the students estimate the answers before the actual measurement is determined. . Read: How Big Is a Foot? by Myller, Rolf; What Is an Inch? by Klein, Leonore; Much Bigger Than Martin by Kellogg, Steven; Jim and the Beanstalk by Briggs, Raymond.
SLE M.3.2 Solve problems using measuring instruments and technology.	Students will solve problems using standard measuring instruments (thermometer, etc.).	. Appro-priate response to teacher direct questions . Verbal explanation . Teacher observation . Peer and self evaluation . Improved vocabulary . State-wide test . Teacher-made test . Writing	. See M.2.1

Grade Level_3_
MEASUREMENT

Standard **M.3.0**	Benchmarks	Assessments	Strategies/Activities
SLE **M.3.3** Pose problems using customary (inches, feet, etc.), non-standard (paper clip, thumbnail, etc.), and metric measurements (centimeters, meters, etc.) in real-world situations.	**Students will in written form pose problems using standard measurements in real-world situations.**	**. Teacher observation** **. Peer and self evaluation** **. State-wide test** **. Teacher-made test** **. Appro-priate response to teacher direct questions** **. Portfolio** **. Verbal explanation** **. Improved vocabulary** **. Project** **. Writing**	**. Extend M.3.1 by having the students dictate then write a problem in a real-world situation that could be solved using standard units of measure. (Ex. Rupert and his brother want to buy new bicycles. They must consider weight and height recommendations. How can they determine their weight and height to aide them in their purchase?)**

Grade Level_3_
DATA ANALYSIS, STATISTICS AND PROBABILITY

Standard DSP.1.0	Benchmarks	Assessments	Strategies/Activities
SLE DSP.1.1 Utilize the scientific method for data analysis. A. Identify the purpose (problem statement) for data collection. B. Make a prediction about the final results of data collected. C. Collect and organize data (tables, graphs, etc.). D. Analyze and interpret data (prediction, inference, conclusion, etc.). E. Display data using appropriate bar graphs, line graphs, tables, pie graphs, etc., with and without technology.	Students will identify the purpose (problem statement) for data collection (which is best, etc.). Students will make, record, and analyze predictions about the final results of data collection (best, worst, etc.). Students will collect, organize and display (bar graphs, line graphs, circle graphs, etc.) data in a variety of formats (physically and pictorially).	. Teacher observation . Peer and self evaluation . State-wide test . Appropriate response to teacher direct questions . Performance . Verbal explanation . Improved vocabulary . Project . Writing	. Read: Statistics by Srivastava, Jane. . Students identify the purpose for data collection (e.g., Which is the best brand of toothpaste to purchase; What kind of house is better for where I live; etc.). They predict the final results of the data collection (e.g., the best brand of toothpaste is...; the worst kind of house to build in this area is...; etc.). They collect data (e.g., research, interviews, etc.) and organize it (e.g., tally marks, checklist, etc.). They display the data in a variety of formats (e.g.; allow a picture of a tube of toothpaste to represent every two individuals that preferred a specified brand; transfer the information to the correct format of a line plot or stem and leaf plot; make a circle graph depicting the types of houses in the area.)
SLE DSP.1.2 Explain the results of data collection using oral and written communication.	Students will orally, pictorially, and in written format explain the results of data collection.	. Teacher observation . State-wide test . Performance . Peer and	. Extend DSP.1.1 to have students orally and in writing explain the results of the data collected.

		self evaluation . Appro-priate response to teacher direct questions . Verbal explanation . Improved vocabulary . Writing . Project	

Grade Level_3_
DATA ANALYSIS, STATISTICS AND PROBABILITY

Standard DSP.2.0	Benchmarks	Assessments	Strategies/Activities
SLE DSP.2.1 Predict the results of data collection and demonstrate the concept of chance through the use of manipulatives. (For example: What is the probability of drawing one red marble from a bag of multicolored marbles?)	Students will use the language of probability (occur most often, likely, etc.) to make predictions based on data from an application of the concept of chance.	. Teacher observation . Peer and self evaluation . State-wide test . Appro-priate response to teacher direct questions . Verbal explanation . Improved vocabulary . Demon-stration . Log or journal	. See DSP.1.1 . Students determine the which color of candy occurs the most often in a bag of assorted colored candies. . Students play games of chance, such as Wheel of Fortune using vocabulary words and a spinner.
SLE DSP.2.2 Record the results of data collection with a variety of formats that could include charts, graphs, tables, and technology, using oral and/or written communication.	Students will record the results of data collection with a variety of symbolic formats including a pictograph using oral and written communication.	. Teacher observation . State-wide test . Peer and self evaluation . Appro-priate response to teacher direct questions . Verbal explanation . Improved vocabulary . Project . Log or journal	. Extend DSP.1.2 and DSP.2.1

Standard DSP.3.0	Benchmarks	Assessments	Strategies/Activities
SLE DSP.3.1 Predict results, analyze data, and find out why some results are more likely, less likely, or equally likely.	Students will predict results, analyze data, and find out why some results are more likely, less likely, or equally likely.	. Teacher observation . Peer and self evaluation . State-wide test . Appro-priate response to teacher direct questions . Verbal explanation . Improved vocabulary . Perform-ance . Log or journal	. See DSP.1.1 and DSP.2.1
SLE DSP.3.2 Make a true statement based on a simple concept of average (median, mean, mode, and range) for a small sample size.	Students will, in written form, make a true statement based on the simple concepts of mode, median, range, and mean (average). (e.g., Find the mode, median, range, and mean of 1, 1, 2, 2, 4)	. Teacher observation . State-wide test . Peer and self evaluation . Appro-priate response to teacher direct questions . Verbal explanation . Improved vocabulary . Exhibi-tion . Teacher-made test	. Students are presented with a series of numbers and are told to determine the mode, the median, the range, and the mean. They write the answers using complete sentences. . Students take their grades on the last number of Mathematics tests and find the mode, median, range, and mean of the scores. They write the results in complete sentences and determine which result they would like to share with their parents.

Grade Level_3_
DATA ANALYSIS, STATISTICS AND PROBABILITY

Standard DSP.3.0	Benchmarks	Assessments	Strategies/Activities
SLE DSP.3.3 Use the tools of technology to assist in gathering, organizing, and presenting information.	Students will use the tools of technology to assist in organizing and presenting information.	. Teacher observation . Peer and self evaluation . Appro-priate response to teacher direct questions . Verbal explanation . Improved vocabulary . Exhibi-tion . Project . Writing	. Students will use appropriate computer software to organize and present information. . See DSP.3.2 allow students to use a calculator to determine the mean.

Standard PAF.1.0	Benchmarks	Assessments	Strategies/Activities
SLE PAF.1.1 Sort and classify a wide variety of materials.	Students will sort and classify a wide variety of materials using two attributes.	. Teacher observation . Peer and self evaluation . Anecdotal records . Statewide test . Exhibition . Demonstration . Checklist	. See GS.1.1 . Students sort and classify books. . Students sort and classify the numbers 1 through 50 (e.g., numbers with one digit are separated from numbers with two digits, etc.)
SLE PAF.1.2 Describe, extend, and create a wide variety of patterns using concrete models.	Students will describe, extend, and create a wide variety of patterns to symbols using concrete models.	. Appropriate response to teacher direct questions . Verbal explanation . Teacher observation . Peer and self evaluation . Improved vocabulary . Statewide test . Performance . Checklist	. See GS.2.2 . Students will determine the pattern for counting money and apply it.

Grade Level_3_
PATTERNS, ALGEBRA AND FUNCTION

Standard PAF.1.0	Benchmarks	Assessments	Strategies/Activities
SLE PAF.1.3 Demonstrate equality (=) and inequality (<, >) using manipulatives and symbols.	Students will create, analyze, generate, and communicate equations and inequalities using manipulatives, pictures, and symbols.	. Teacher observation . Peer and self evaluation . Appropriate response to teacher direct questions . Verbal explanation . Improved vocabulary . Statewide test . Demonstration . Teacher-made test	. Students are given a sheet of numerical comparisons presented pictorially and symbolically to complete with or without manipulatives. . Students generate equations and inequalities while comparing the number of pencils they have in their possession.
SLE PAF.1.4 Demonstrate the beginning concept of a variable. (Use boxes, letters, or other symbols to stand for any number or object in simple situations, with or without concrete material, such as 6 + __ = 8 or 3 + B = 4, etc.).	Students will use boxes, letters, or other symbols to stand for an unknown that will form a true mathematical statement. (e.g., __ x 9 = 63; 81 ÷ __ = 9; (43 - 32) x (5 + 3) = __)	. Appropriate response to teacher direct questions . Verbal explanation . Teacher observation . Peer and self evaluation . Improved vocabulary . Statewide test . Teacher-made test . Demonstration	. Extend PAF.1.3 to include mathematical sentences presented with variables.

Grade Level_3_
PATTERNS, ALGEBRA AND FUNCTION

Standard PAF.1.0	Benchmarks	Assessments	Strategies/Activities
SLE PAF.1.5 Express mathematical relationships in one- and two-dimensions. (Length x Width = Area, L x W = A, etc.)	Students will express mathematical relationships on one- and two-dimensions (e.g., 60 minutes = 1 hour, 60 min. = 1 hr.; etc.).	. Teacher observation . Peer and self evaluation . State-wide test . Teacher-made test . Journal . Perform-ance	. Students will be assigned mathematical terms and their abbreviations as an extension to weekly spelling tests. . Extend M.1.2 to have students write the units of measure both one- and two-dimensionally.
SLE PAF.1.6 Use oral and/or written communication to interpret created patterns.	Students will pictorially, orally, and in written format communicate to interpret a wide variety of created patterns.	. Appro-priate response to teacher direct questions . Verbal explanation . Teacher observation . Peer and self evaluation . Improved vocabulary . State-wide test . Teacher-made test . Perform-ance . Writing	. See PAF.1.2

Mathematics Checklist- Third Grade

Student Name:	Introduced	Progressing	Proficient
Number Sense, Properties, and Operations			
Count and group quantities to make 100			
Use multiples of 10 and 100 to combine quantities			
Use objects to show thousands, hundreds, tens and ones place value			
Read and write numbers in the thousands			
Estimate quantities to 1000			
Calculate differences within 1000			
Halve and double numbers			
Represent groups using multiplication; find factor pairs for a given number			
Use skip counting to multiply and divide; recognize skip counting as multiples			
Illustrate and explain the relationship between multiplication and division			
Develop and use strategies to solve real-world problems involving multiplication and division			
Know basic multiplication facts; use standard notation for multiplication and division			
Estimate before solving computation to determine the reasonableness of the answer			
Use more than one method to solve a computation problem			
Solve problems by selecting the appropriate operation			
Record and explain strategies for solving computations			
Use words and fraction notation to describe a quantity (3/4, three-fourths)			
Name shaded part of a whole			
Determine equivalents for common fractions (1/2 = 5/10)			
Show the connection between fractions and division (6÷2, $\frac{1}{2}$ of 6, 6/2)			
Use the calculator to show common fractions as decimals (3/4=0.75)			
Calculate to solve problems with time, money, and linear measurement equivalencies			

Mathematics Checklist- Third Grade, Page 2

	Introduced	Progressing	Proficient
Geometry and Spatial Sense			
Compare shapes to determine congruence using rotations (turns) and reflections (flips)			
Recognize 360°as a full turn, 180° as a half turn, and 90° as a quarter turn			
Explore, sort, compare and talk about common geometric solids			
Find patterns for covering a space			
Recognize sides, vertices, and angles of polygons			
Recognize faces, corners, and edges of polyhedra			
Build geometric figures to satisfy given criteria			
Describe real-world objects/structures in geometric terms			
Show spatial sense by participating in paper-folding activities (like Origami)			
Tell time to the nearest minute			
Measurement			
Select unit; measure using inch, foot, yard			
Select unit; measure using centimeter, meter			
Convert inches to feet to yards; convert centimeters to meters			
Estimate and measure perimeter			
Measure area by covering a surface with square units			
Use multiplication to find area of a rectangle			
Explain area and perimeter			
Predict and determine the number of cubes that fit in a rectangular box			
Know that turns are measured in degrees			
Data, Probability, and Statistics			
Organize and present data on tables, line plots and bar graphs			
Describe the shape of data using appropriate vocabulary, look for patterns; interpret data			
Use data to make predictions			
Decide whether a game of chance is "fair"			
Patterns, Algebra, and Functions			
Recognize patterns of odd and even			
Use calculator and Hundreds Board to show patterns in multiples of 2, 3, 4, 5, 6, 9, 10, 11, and 12			
Skip count by 25, 50, 100			
Know fact families (34, 66, 100)			
Create a numerical expression that equals a given number			
Write an equation that represents a problem			
Identify the missing number or operation in an equation			

Comments:

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