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State Superintendent of Public Instruction
Oklahoma State Department of Education

CARGO



Curriculum

Access

Modified



Resource

Guide

**A Modified Approach to Teaching
Priority Academic Student Skills
(PASS)**

Math
Grades 3-5



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A Message from

State Superintendent

Sandy Garrett



**Curriculum Access Resource Guide – Modified
CARG-M**

It is with great pleasure as Oklahoma’s State Superintendent of Public Instruction, that I present to you the new Curriculum Access Resource Guide that is aligned to *Priority Academic Student Skills (PASS)* standards for students with disabilities. The Oklahoma State Department of Education, Special Education Services, is always striving to provide curriculum that is challenging and appropriate for our students on Individualized Education Programs (IEPs).

The CARG-M is intended to provide access to the general curriculum for students with disabilities, who can make significant progress but may not reach grade-level achievement standards within the same time frame as other students, even after receiving the best designed instructional interventions from highly trained teachers.

Priority Academic Student Skills

Adapted for Grade 3

Math

The student applies a wide range of strategies to describe, interpret, evaluate, and analyze a variety of math problems and context.

Standard 1: Patterns and Algebraic Reasoning - The student will use a variety of problem-solving approaches to extend and create patterns.

Modified Academic Indicators (MAIs):

- 3.1.1 Describe orally and extend patterns using numbers (by 2s, by 5s).
- 3.1.2 Analyze tables to formulate generalizations about patterns in a variety of situations.

Classroom Activities:

The student:

- 3.1.1a Uses a number line with some missing numbers to develop and complete.
- 3.1.1b Completes hundreds chart (highlight 2s, 5s, etc.).
- 3.1.1b Completes or extends a pattern with beans or other common objects.
- 3.1.2a Plays games such as tic-tac-toe to identify a patterns.
- 3.1.2b Uses data from tables to develop graphs (bar graphs, circle graphs, Diagrams, etc.).
- 3.1.2c Uses manipulatives such as peg boards to create patterns.
- 3.1.2d. Identifies patterns in a table.

Standard 2: Number Sense - The student will use numbers and number relationships to acquire basic facts.

Modified Academic Indicators (MAIs):

3.2.1 Place Value

- a. Model the concept of place value through 3 digits.
- b. Read and write whole numbers up to 3 digits.

3.2.2 Whole Numbers and Fractions

- a. Compare and order whole numbers up to 3 digits.
- b. Compare and order fractions with the same denominator including halves, thirds, and fourths, using a model.

Classroom Activities:

3.2.1a Uses manipulatives to combine bundles of 10 to place on place value mat.

3.2.1b Represents a number by illustrating it through manipulatives (what is the value of 3 in 32?).

3.2.2 Uses manipulatives that represent fractions (paper plate, candy bar, oranges, clay, washcloths, fraction circles, etc.).

Standard 3: Number Operations and Computation - The student will estimate and compute with whole numbers.

Modified Academic Indicators (MAIs):

3.3.1 Estimate; find the sum and difference, with and without regrouping of 2- and 3-digit numbers to solve application problems.

3.3.2 Multiplication Concepts

- a. Demonstrate fluency with basic multiplication facts and fact families through $5 \bullet 5$ and use a multiplication chart to apply multiplication facts through $10 \bullet 10$.

- b. Develop multiplication algorithms (e.g., use objects to show 4 groups of 3 objects, show multiplication as repeated addition).
- c. Estimate the product of 2-digit numbers by rounding to the nearest multiple of 10.
- d. Recognize and apply the communicative and identity properties of multiplication using models and manipulatives.

3.3.3 Solve problems involving money that require addition and subtraction.

Classroom Activities:

The student:

- 3.3.1a Uses a number line to determine if a number is closer to 100 or 200, etc.
- 3.3.1b Estimates how many in a group of objects (jelly bean jar, small bag of candy, etc.), then counts them.
- 3.3.2a Uses the calculator to explore fact families of 2s, 5s, and 10s.
- 3.3.2a Uses multiplication charts to answer simple multiplication facts.
- 3.3.2a Uses dimes to count to 100 by 10.
- 3.3.3a Makes a purchase using “Next Higher Dollar” method.
- 3.3.3b Uses money manipulatives and practices subtraction problems as presented in the book *Alexander Who Used to be Rich Last Sunday*.

Standard 4: Geometry and Measurement - The student will use geometric properties and relationships to recognize and describe shapes and use customary and metric measurements to solve problems.

Modified Academic Indicators (MAIs):

- 3.4.1 Spatial Reasoning and Coordinate Locations
 - a. Describe and compare two-dimensional shapes.
 - b. Identify locations on a grid with ordered pairs.
- 3.4.2 Measurement
 - a. Solve problems with customary units involving length using inch and half-inch measurements and weight using pound and ounce.

- b. Use manipulatives to develop the concept of perimeter.
- 3.4.3. Develop and use strategies to estimate measurements.
- 3.4.4 Tell time on digital or analog clock to the hour and half hour, and become familiar with reading a thermometer.

Classroom Activities:

The student:

- 3.4.1a Identifies and counts the edges of a square and other two dimensional shapes.
- 3.4.1a Identifies and matches congruent shapes and combines shapes to form new shapes.
- 3.4.1a Creates a shape collage or mobile using shapes found in magazines and newspapers.
- 3.4.1a Identifies same shapes by touch through playing games with a teacher-created mystery bag.
- 3.4.1b Plays a grid-based game for identifying locations on a grid.
- 3.4.1b Creates a masking tape grid on floor and uses students or objects for locating ordered pairs.
- 3.4.2a Uses a common object to measure or weigh other objects (nonstandard units of measurement).
- 3.4.2a Measures shadows of classmates or objects.
- 3.4.2b Uses a geoboard, yarn, etc., to create a perimeter of a shape.
- 3.4.2b Traces the perimeter of a shape.
- 3.4.4a Uses manipulatives such as a *Judy Clock*, visual schedule, stamps, and digital clock to practice identifying time to the hour and half hour.
- 3.4.4b Practices reading a classroom thermometer to record the temperature outside or inside at different times of the day/year.

Standard 5: Data Analysis and Probability - The student will demonstrate an understanding of data collection, display and interpretation.

Modified Academic Indicators (MAIs):

3.5.1 Data Analysis

- a. Collect and record data to help answer questions.
- b. Read graphs and charts.
- c. Construct a bar graph or pictograph from a set of data.

3.5.2 Probability

- a. Describe the probability (more, less, or equally likely) of chance events.
- b. List arrangements (permutations) and combinations of up to three items (e.g., possible ways to arrange scoops of chocolate, strawberry, and vanilla ice cream on a cone).

Classroom Activities:

The student:

- 3.5.1a Orally reports data from a completed graph depicting favorite colors, foods, numbers of siblings, etc., of classmates.
- 3.5.1b Constructs graphs (bar graphs, circle graphs, Venn Diagrams, etc.) using data collected from survey.
- 3.5.1c Asks interpretive questions based upon previously developed graphs.
- 3.5.2 Plays probability games using dice or probability bags to determine the chances of an effect occurring

Priority Academic Student Skills

Adapted for

Grade 4

Math

The student applies a wide range of strategies to describe, interpret, evaluate, and analyze a variety of math problems and context.

Standard 1: Patterns and Algebraic Reasoning - The student will use a variety of problem-solving approaches to extend and create patterns.

Modified Academic Indicators (MAIs):

- 4.1.1 Discover, describe, and extend a variety of patterns using tables, graphs, rules, and models.
- 4.1.2 Elementary Function Concepts
 - a. Use a variety of techniques to generalize simple number patterns.
 - b. Solve simple open sentences involving addition and subtraction with whole numbers (with a variable, e.g., $a + 17 = 23$).

Classroom Activities:

The student:

- 4.1.a Uses data from tables to develop graphs (bar graphs, circle graphs, Diagrams, etc.).
- 4.1.1b Identifies patterns from a table.
- 4.1.1c Explores the characteristics of odd and even numbers by completing, highlighting, etc., a hundreds chart.

- 4.1.1d Uses pattern blocks or other manipulatives to extend patterns of geometric shapes.
- 4.1.2a Completes hundreds chart (highlights 2s, 5s, etc.).
- 4.1.2a Completes or extends a pattern.
- 4.1.2a Becomes familiar with function machines and T-tables to demonstrate “What is the rule?”
- 4.2.2b Uses a calculator to explore number patterns.
- 4.2.2b Completes a number line with some missing numbers.
- 4.2.2b Uses a number line to count up or down to a stated number.

Standard 2: Number Sense - The student will use numbers and number relationships to acquire basic number facts.

Modified Academic Indicators (MAIs):

- 4.2.1 Place Value
 - a. Apply the concept of place value through 4 digits.
 - b. Demonstrate concept of decimals by working with money.
- 4.2.2 Compare and order whole numbers.
- 4.2.3 Fractions
 - a. Use 0, $\frac{1}{2}$, and 1, as benchmarks to add in other fractions.
 - b. Create physical and pictorial models of equivalent and nonequivalent fractional parts to be compared.

Classroom Activities:

The student:

- 4.2.1a. Stands in “the ones, tens, hundreds, thousands” place on a grid taped to the floor.
- 4.2.1a Uses manipulatives to combine bundles of 10 to place on place value mat.
- 4.2.1a Writes numbers in expanded form.
- 4.2.1a Plays a trading game involving place value.

- 4.2.1a Working in a pair, represents a number by illustrating it through manipulatives (e.g., what is the value of 3 in 342?).
- 4.2.1b Demonstrates money value by matching picture to amount.
- 4.2.2a Uses a line graph or number line with missing numbers to order digits.
- 4.2.2b Represents the order of the numbers seen by way of flashcards while using a number line that has been taped to the floor or using a rope with knots.
- 4.2.3a Uses nesting measuring cups to stack fractions in the sequential order.
- 4.2.3b Demonstrates fractions by using manipulatives (paper plate, candy bar, oranges, clay, fraction circles, etc.).

Standard 3: Number Operations - The student will estimate and compute with whole numbers.

Modified Academic Indicators (MAIs):

- 4.3.1 Estimate and find the product of 2-digit numbers to solve application problems.
- 4.3.2 Division Concepts
 - a. Demonstrate with division facts and fact families through 25 divided by 5.
 - b. Become familiar with division algorithms (e.g., use objects to show 12 items arranged in 3 groups).
 - c. Find the quotient (with and without remainders) with a 1-digit divisor and a 2-digit dividend to solve application problems.
- 4.3.3 Use a variety of resources to estimate simple two digit addition and subtraction computations.
- 4.3.4 Develop basic understanding of the associative property of multiplication.

Classroom Activities:

The student:

- 4.3.1a Uses the calculator to multiply two digit numbers.
- 4.3.1b Uses multiplication charts to answer simple multiplication and division facts.
- 4.3.2a Uses physical materials to show 12 objects arranged in 3 groups.
- 4.3.2a Shows division as the inverse of multiplication using fact families.

- 4.3.2c Uses the calculator to divide two digit numbers.
- 4.3.2c Uses a multiplication chart to determine division facts through 100 divided by 10.
- 4.3.3 Uses a number chart, a number line or other manipulatives to estimate two digit addition and subtraction problems.

Standard 4: Geometry and Measurement - The student will use geometric properties and relationships to analyze shapes and use standard units of customary and metric measurements to solve problems.

Modified Academic Indicators (MAIs):

- 4.4.1 Basic Characteristics of Lines and Angles
 - a. Identify models of intersecting, parallel, and perpendicular lines.
 - b. Identify and compare angles equal to, less than, or greater than 90 degrees.
- 4.4.2 Identify a horizontal and vertical line.
- 4.4.3 Spatial Reasoning
 - a. Describe the effects on two- and three-dimensional objects when they slide (translate), flip (reflect), and turn (rotate).
 - b. Predict and verify the effects of changing two dimensional figures.
- 4.4.4 Measurement
 - a. Establish benchmarks for customary units and estimate the measures of a variety of objects.
 - b. Solve application problems involving money, time and temperature.

Classroom Activities:

The student:

- 4.4.1a Identifies parallel and perpendicular lines by using a masking tape grid on the floor and 2 strings.
- 4.4.1a Uses geoboard, yarn, etc., to create a shape that contains parallel and/or perpendicular lines.

- 4.4.1b Traces, draws or constructs the perimeter of right, obtuse, or acute angles, using spaghetti, straws, toothpicks, etc.
- 4.4.1b Uses flexible straws to create shapes or angles.
- 4.4.1b Reads or listens to *The Tricky Triangle* by Marilyn Burns, then uses straws to construct shapes identified in the story.
- 4.4.1b Uses right angles to determine the approximate size of other angles.
- 4.4.2 Demonstrates or locates horizontal and vertical lines in the environment (e.g., vertical - lampposts; horizontal - roads).

- 4.4.3a Uses the overhead to rotate, flip or turn shapes to demonstrate spatial concepts.
- 4.4.3a Uses software programs that practice spatial concepts.
- 4.4.3a Folds paper and cuts shapes to demonstrate symmetrical patterns (snowflakes, hearts, etc.).
- 4.4.3b Discusses possible outcomes of changing two-dimensional figures (e.g., fold a square in half and what happens?).
- 4.4.3b Uses manipulatives to verify outcomes.
- 4.4.4a Uses a common object to measure other objects (nonstandard units of measurement).
- 4.4.4a Places three or more objects in order from least to greatest using length and/or weight.
- 4.4.4b Uses manipulatives such as a *Judy Clock*, visual schedule, stamps, or digital clock to identify time to the minute.
- 4.4.4b Predicts and records the change in temperature from morning to afternoon.

Standard 5: Data, Analysis - The student will demonstrate an understanding of data collection, display and interpretation.

Modified Academic Indicators (MAIs):

4.5.1 Data Analysis

- a. Examine data displays such as tallies, tables, charts and graphs and use the observations to answer questions.
 - b. Collect, organize and record data in tables and graphs.
- 4.5.2 Investigate and record probabilities by experimenting with devices that generate random outcomes.

Classroom Activities:

The student:

- 4.5.1a Asks interpretive questions based upon previously developed graphs.
- 4.5.1a Uses a table in social studies of population data to answer questions.
- 4.5.1b Develops graphs (bar graphs, circle graphs, Venn Diagrams, etc.) from data collected from a survey.

Priority Academic Student Skills

Adapted for Grade 5

Math

The student applies a wide range of strategies to describe, interpret, evaluate, and analyze a variety of math problems and context.

Standard 1: Patterns and Algebraic Reasoning - The student will use a variety of problem-solving approaches to extend and create patterns.

Modified Academic Indicators (MAIs):

- 5.1.1 Describe rules that produce patterns found in tables, graphs, and models, and use variables to solve problems or to describe general rules in algebraic expression or equation form.
- 5.1.2 Use algebraic problem-solving techniques.

Classroom Activities:

The student:

- 5.1.1a Creates graphs (bar graphs, circle graphs, Venn Diagrams, etc.).
- 5.1.1b Explores the characteristics of 5s, 10s and even numbers by completing, highlighting, etc., a hundreds chart.
- 5.1.1c Completes, extends and/or explains a pattern with common objects(e.g., boxes, letters, pawns, number cubes, or other symbols).
- 5.1.1d Adds 5 to each element in a number pattern written as $\square + 5$.
- 5.2.2a Uses calculators to explore number patterns.
- 5.2.2b Completes a number line with various missing numbers.
- 5.2.2c Uses number line to count up or down to a stated number.

- 5.2.2d Uses a balance scale to model an equation and show how subtracting a number from one side requires subtracting the same amount from the other side to solve problems.

Standard 2: Number Sense - The student will demonstrate an understanding of the basic concepts and properties of real numbers.

Modified Academic Indicators (MAIs):

- 5.2.1 Fractions, Decimals and Percents
- a. Solve problems using decimal numbers to the 100ths place.
 - b. Compare, convert, and order common fractions and decimals to the 100ths place.
 - c. Introduce models to make a connection between fractions and decimals.
- 5.2.2 Basic Number Theory Concepts
- a. Apply the basic properties of arithmetic: commutative, associative, and identity to solve problems.
 - b. Identify prime and composite numbers.

Classroom Activities:

The student:

- 5.2.1a Stands in “the ones, tenths, hundredths” place on a grid taped to the floor.
- 5.2.1a Uses manipulatives to combine bundles of 10 to place on place value mat.
- 5.2.1a Represents a number by illustrating it through manipulatives (what is the value of 3 in 342?).
- 5.2.1a Demonstrates money value by matching picture to amount.
- 5.2.1a Adds prices on a menu using a calculator.
- 5.2.1a Plays board games involving money.
- 5.2.1 Uses manipulatives (Stacking Equivalency Cubes) to demonstrate and compare fractions and decimals to the whole, half, quarter and three-quarters.
- 5.2.1c Matches money value to decimal number ($50\text{¢} = .50 = \frac{1}{2}$ dollar).

- 5.2.2a Regroups $(5 + 1) + (5 + 1)$ to show that it equals $(5 + 5) + (1 + 1)$ to solve problems.
- 5.2.2a Uses paper clips or other sets of objects to demonstrate properties.
- 5.2.2b Uses hundreds chart to highlight composite numbers with a model of composite numbers.
- 5.2.2b Uses hundreds chart to highlight prime numbers with a model of prime numbers.

Standard 3: Number Operations - The student will estimate and compute with whole numbers, decimals and fractions.

Modified Academic Indicators (MAIs):

- 5.3.1 Estimation: Use estimation skills to determine solutions to problems involving decimals.
- 5.3.2 Whole Numbers, Decimals, and Fractions
 - a. Add and subtract decimal numbers with the same place values.
 - b. Multiply whole numbers and decimal numbers with 1- or 2-digit multipliers to solve problems.
 - c. Divide decimal numbers by 1-digit whole numbers.
 - d. Add common fractions to solve problems using a variety of methods.

Classroom Activities:

The student:

- 5.3.1a Uses the “Next Higher Dollar” method to determine if a pair of pants marked at \$14.95 and a shirt at \$9.98 cost about $\$15 + \10 or \$25.
- 5.3.1b Uses materials to demonstrate and verify estimations of various units of measurement (how many cups to fill a tea pitcher, how many tea pitchers to fill a bucket, which is heavier an apple or a book, a book or a feather).
- 5.3.1c Uses number chart, number line or other manipulatives to estimate two digit addition and subtraction problems.

- 5.3.2a Uses a calculator to add and subtract numbers with decimals (e.g., $3.62 + 1.35$).
- 5.3.2a Uses examples of money ($\$1.25 + \2.30) for computation.
- 5.3.2b Uses a calculator to multiply numbers with decimals (e.g., 3.62×23).
- 5.3.2c Uses a calculator to divide whole numbers (e.g., $3.62 \div 2$).
- 5.3.2d Uses manipulatives to add fractions (e.g., pizza, candy bar, oranges, clay, fraction circles, pictures, fraction strips).

Standard 4: Geometry and Measurement - The student will apply geometric properties and relationships and use measurements within the metric and customary systems to solve problems in a variety of contexts.

Modified Academic Indicators (MAIs):

- 5.4.1 Identify and describe the basic properties of figures.
- 5.4.2 Show the perimeter of simple polygons and area of a rectangle.
- 5.4.3 Use nonstandard units (beans, rice, candies) and standard units (centimeter cubes, 1-inch cubes) to find the volume of rectangular solids.
- 5.4.4 Use the appropriate units and tools to estimate and measure temperature, distance, length, weight, and angles.
- 5.4.5 Recognize basic measurements volume, weight and distance using customary units.

Classroom Activities:

- 5.4.1 Identifies and describes 2 and 3 dimensional shapes to a partner (mystery bag, blindfolded, “guess the shape”).
- 5.4.2a Uses various materials to build rectangles with different perimeters and areas using one color for perimeter and a different color for area.
- 5.4.2b Uses software programs that practice spatial concepts.
- 5.4.2c Uses geoboard, yarn, etc., to create a perimeter of a shape.
- 5.4.2d Uses beans, rice, candies or centimeter cubes, 1-inch cubes to demonstrate area of a rectangle.

- 5.4.4 Uses various measurement instruments to demonstrate relationships between the units. (cups/quarts/gallons, inches/feet/ yards, minutes/hours, ounces/pounds).

Standard 5: Data, Analysis - The student will use data analysis, statistics and probability to interpret data in a variety of contexts.

Modified Academic Indicators (MAIs):

5.5.1 Data Analysis

- a. Analyze data to create and interpret tables and graphs.
- b. Select the most appropriate type of table or graph.
- c. Compare between displays of data.
- d. Determine the range (spread) and the mean.

5.5.2 Probability

- a. Determine the probability of events occurring in familiar contexts and express probabilities as fractions.
- b. List combinations (permutations) of up to three items.

Classroom Activities:

The student:

- 5.5.1a Conducts a survey (favorite ice cream flavors, number of siblings, etc.).
- 5.5.1a Develops graphs and/or tables (bar graphs, circle graphs, Venn Diagrams, etc.).
- 5.5.1a Creates questions that can be answered using his/her data (e.g., how many students prefer strawberry ice cream?).
- 5.5.1b Designs a bar graph and line graph to determine which graph may be more appropriate when displaying data (height of a person over time, food choice in cafeteria, etc.).
- 5.5.1c Compares multiple sets of data from one graph.
- 5.5.1c Uses bar graph and pie chart to display the same set of data, then compares similarities and differences.

- 5.5.1d Uses a number line to find first and last number from a given set of numbers.
- 5.5.1d Uses a calculator average a set of numbers (adds a set of numbers and divides by the total number of the given set).
- 5.5.2a Plays and records results from probability games making use of dice, probability bags, coins, number cubes, or spinners to determine the chances of an effect occurring.
- 5.5.2b Discovers how many different combinations he/she can make using manipulatives (e.g., arranging scoops of strawberry, chocolate, and vanilla ice cream).