

Course Syllabus

Mathematics, Mathematics Grade 5

Morgan County Curriculum 4.1 Elementary., Final
Morgan County School District

Number Properties and Operations (40%)

- 1.1.1 (DOK 2) ASSESSED
The learner will be able to explain how the base 10 numbers system relates to place value and apply multiple representations such as drawings, manipulatives, base-10 blocks, number lines, expanded form and symbols to describe whole numbers 0 to 99,999,999 as well as be able to APPLY these same representations to describe fractions (halves, thirds, fourths) and APPLY these numbers to real world problems.
- 1.1.2 ASSESSED
The learner will be able to read, write and rename whole numbers, fractions and decimals, and apply them to real world and mathematical problems.
- 1.1.3 (DOK 2) ASSESSED
The learner will be able to compare ($<$, $>$, $=$) and order whole numbers), fractions and decimals, and explain the relationships (equivalence, order) between and among them.
- 1.2.1 (DOK 2) ASSESSED
The learner will be able to apply and describe appropriate strategies for estimating quantities of objects and computational results with addition and subtraction.
- 1.3.1 (DOK 2) ASSESSED
The learner will be able to analyze real-world problems to identify appropriate representations using mathematical operations, and will apply operations to solve real-world problems with the following constraints:
 - " add, subtract, multiply, and divide whole numbers (less than 100,000,000), using technology where appropriate;
 - " add and subtract fractions with like denominators through 16, with sums less than or equal to one and
 - " add and subtract decimals through hundredths.

- 1.3.2 Supporting
The learner will be able to skip count forward and backward.
- 1.3.3 Supporting
The learner will be able to multiply decimals through tenths.
- 1.5.1 (DOK 2) ASSESSED
The learner will be able to identify and determine composite numbers, prime numbers, multiples of a number, factors of a number and least common multiples (LCM), and will apply these numbers to solve real-world problems.
- 1.5.2 Supporting
The learner will be able to use the commutative properties of addition and multiplication, the identity properties of addition and multiplication and the zero property of multiplication in written and mental computation.

Measurement (10%)

- 2.1.1 (DOK 2) ASSESSED
The learner will be able to apply standard units to measure length (to the nearest eighth-inch or the nearest centimeter) and to determine:
 - " weight (ounce, pound; gram, kilogram);
 - " perimeter;
 - " o area (figures that can be divided into rectangular shapes);
 - " time (nearest minute);
 - " temperature (Fahrenheit and Celsius) and
 - " angle measures (nearest degree).
- 2.1.2 Supporting
The learner will be able to choose and use appropriate tools (e.g., protractor, meter stick, ruler) for specific tasks and apply skills to solve real-world and mathematical problems.
- 2.1.3 Supporting
The learner will be able to use measurements to identify, describe, sort and compare attributes of objects and apply these to solve real-world and mathematical problems.

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■ 2.1.4 Supporting

The learner will be able to measure volume of rectangular prisms, liquid capacity, and money using standard units and apply these skills to solve real-world and mathematical problems.

■ 2.1.6 (DOK 2) ASSESSED

The learner will be able to estimate weight, length, perimeter, area, angle measures and time using appropriate units of measurement.

■ 2.2.1 (DOK 3) ASSESSED

The learner will be able to determine elapsed time.

■ 2.2.2 Supporting

The learner will be able to determine elapsed time by half hours.

■ 2.2.3 (DOK 2) ASSESSED

The learner will be able to convert units within the same measurement system [U.S. customary (inches, feet, yards, miles; ounces, pounds, tons), metric (millimeters, centimeters, meters, kilometers; grams, kilograms), money, or time] and use the units to solve problems.

Geometry (20%)

■ 3.1.1 (DOK 2) ASSESSED

The learner will be able to describe and provide examples of basic geometric elements and terms [points, segments, lines (perpendicular, parallel, intersecting), rays, angles (acute, right, obtuse), sides, edges, faces, bases, vertices, radius, diameter] and will apply these elements to solve real-world and mathematical problems.

■ 3.1.2 (DOK 2) ASSESSED

The learner will be able to describe and provide examples of basic two-dimensional shapes [circles, triangles (right, equilateral), all quadrilaterals, pentagons, hexagons, octagons] and will apply these shapes to solve real-world and mathematical problems.

■ 3.1.3 (DOK 2) ASSESSED

The learner will be able to describe and provide examples of basic three-dimensional objects (spheres, cones, cylinders, pyramids, cubes, triangular and rectangular prisms), will identify three-dimensional objects from two-dimensional representations (nets) and will apply the attributes to solve real-world and mathematical problems.

■ 3.1.5 (DOK 2) ASSESSED

The learner will be able to identify and describe congruent figures and similar figures in real-world and mathematical problems.

■ 3.2.1 (DOK 3) ASSESSED

The learner will be able to describe and provide examples of line symmetry in real-world and mathematical problems or will apply one line of symmetry to construct a simple geometric design.

■ 3.3.1 (DOK 2) ASSESSED

The learner will be able to identify and graph ordered pairs on a positive coordinate system scaled by ones, twos, threes, fives or tens; locate points on a grid; and apply graphing in the coordinate system to solve real-world problems.

■ 3.2.2 (DOK 1) ASSESSED

The learner will be able to identify 90° rotations, reflections or translations of basic shapes within a plane.

Data Analysis and Probability (15%)

■ 4.1.1 (DOK 3) ASSESSED

The learner will be able to analyze and make inferences from data displays like drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs with two or three sectors, line plots, and Venn diagrams.

■ 4.1.2 Supporting

The learner will be able to collect data (e.g., tallies, surveys) and explain how the skills apply in real-world and mathematical problems.

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■ 4.1.3 (DOK 2) ASSESSED

The learner will be able to construct data displays (pictographs, bar graphs, line plots, line graphs, Venn diagrams, tables).

■ 4.2.1 (DOK 2) ASSESSED

The learner will be able to determine and apply the mean, median, mode and range of a set of data.

■ 4.3.1 ASSESSED

The learner will be able to describe and give examples of the process of using data to answer questions (e.g., pose a question, plan, collect data, organize and display data, interpret data to answer questions).

■ 4.4.3 ASSESSED

The learner will be able to describe and give examples of the probability of an unlikely event (near zero) and a likely event (near one).

■ 4.4.1 (DOK 2) ASSESSED

The learner will be able to determine all possible outcomes of an activity/event with up to 12 possible outcomes.

■ 4.4.2 (DOK 2) ASSESSED

The learner will be able to determine the likelihood of an event and the probability of an event (expressed as a fraction).

Algebraic Thinking (15%)

■ 5.1.1 (DOK 3) ASSESSED

The learner will be able to extend patterns, find the missing term(s) in a pattern or describe rules for patterns (numbers, pictures, tables, words) from real-world and mathematical problems.

■ 5.1.2 (DOK 2) ASSESSED

The learner will be able to describe functions (input-output) through pictures tables or words and will construct tables to analyze functions based on real-world or mathematical problems.

■ 5.1.3 (DOK 2) ASSESSED

The learner will be able to determine an output value or an input value for a function rule given the other value.

■ 5.2.1 (DOK 2) ASSESSED

The learner will be able to model verbal descriptions of real-world and mathematical problems using a variable or a missing value in an expression.

■ 5.3.1 (DOK 2) ASSESSED

The learner will be able to model real-world and mathematical problems with simple number sentences (equations and inequalities) with a variable or missing value (e.g., $4 = 2 \times N$, $___ + 5 > 14$) and apply simple number sentences to solve mathematical and real-world problems.