

Curriculum Grade Book

Morgan County School District

Final, 01/11/2010

ACT (Embedded)

Mathematics

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Algebraic Concepts																														
● Objective 1 The learner will be able to identify and use properties of real numbers.																														
● Objective 2 The learner will be able to model and solve simple linear equations using concrete, informal and formal strategies.																														
● Objective 3 The learner will be able to solve for the value of a variable given in an inequality and as shown on a graph by manipulating the inequality correctly.																														
● Objective 4 The learner will be able to know the definition of square and cube roots, and how to determine and/or estimate them.																														
● Objective 5 The learner will be able to correctly manipulate fractional exponents, understanding their relationship to radicals raised to integral exponents.																														
● Objective 6 The learner will be able to determine and discuss what effect operations have on numbers.																														
● Objective 7 The learner will be able to understand how to substitute values for, find slope values using, and where, when, and why to apply the slope formula.																														
● Objective 8 The learner will be able to understand how to substitute values for, solve equations using, and where, when, and why to apply the distance formula.																														

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<p>● Objective 9 The learner will be able to understand how to substitute values for, what the standard form is, and where, when, and how to use the slope-intercept form for the equation of a line.</p>																														
<p>● Objective 10 The learner will be able to understand how to substitute values for, solve equations using, and where, when, and why to apply the midpoint formula.</p>																														
<p>■ Objective 11 The learner will be able to calculate solutions to systems of linear equations.</p>																														
<p>■ Objective 12 The learner will be able to determine the correct order of operations when addition, subtraction, multiplication, division, and parentheses are included.</p>																														
<p>■ Objective 13 The learner will be able to determine the correct order of operations for an exponential equation.</p>																														
<p>■ Objective 14 The learner will be able to apply the following properties: commutative, associative, distributive, identity, and reciprocal.</p>																														
<p>■ Objective 15 The learner will be able to graph the solution set of a given one variable inequality.</p>																														
<p>■ Objective 16 The learner will be able to understand the definition of absolute value of a number as the distance that number is from the origin.</p>																														

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<p>■ Objective 17 The learner will be able to evaluate an algebraic expression by substituting a given value for a variable.</p>																														
<p>■ Objective 18 The learner will be able to demonstrate an understanding of the value of a number represented in exponential form.</p>																														
<p>■ Objective 19 The learner will be able to multiply two whole numbers with different exponents.</p>																														
<p>■ Objective 20 The learner will be able to correctly distribute an exterior exponent through an expression contained in parenthesis.</p>																														
<p>■ Objective 21 The learner will be able to correctly manipulate numbers with negative exponents, understanding their reciprocal nature.</p>																														
<p>■ Objective 22 The learner will be able to divide exponential numbers that have the same base and integer exponents.</p>																														
<p>■ Objective 23 The learner will be able to use the rules of exponents that allow for the raising of a power to a power.</p>																														
<p>■ Objective 24 The learner will be able to identify operation rules regarding the sum and product of odd and/or even numbers.</p>																														
<p>■ Objective 25 The learner will be able to understand the basic concept of a variable as representing an unknown quantity.</p>																														
<p>■ Objective 26</p>																														

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The learner will be able to factor a given algebraic expression.

■ Objective 27

The learner will be able to factor the difference between two squares.

■ Objective 28

The learner will be able to factor a quadratic trinomial.

■ Objective 29

The learner will be able to factor trinomials, perfect square trinomials, or the difference between two squares.

Calculus and Pre-Calculus

● Objective 30

The learner will be able to use a given equation of an ellipse in standard form to find the center, foci, and vertices, and then graph the ellipse.

● Objective 31

The learner will be able to use a given equation of a parabola to find the vector, focus, and direction and then graph the parabola.

Decimals

● Objective 32

The learner will be able to convert decimals to fractions and fractions to decimals.

■ Objective 33

The learner will be able to become proficient in the addition and subtraction of decimal numbers.

■ Objective 34

The learner will be able to multiply 2 decimal numbers.

■ Objective 35

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The learner will be able to factor a given algebraic expression.																														
■ Objective 27 The learner will be able to factor the difference between two squares.																														
■ Objective 28 The learner will be able to factor a quadratic trinomial.																														
■ Objective 29 The learner will be able to factor trinomials, perfect square trinomials, or the difference between two squares.																														
Calculus and Pre-Calculus																														
● Objective 30 The learner will be able to use a given equation of an ellipse in standard form to find the center, foci, and vertices, and then graph the ellipse.																														
● Objective 31 The learner will be able to use a given equation of a parabola to find the vector, focus, and direction and then graph the parabola.																														
Decimals																														
● Objective 32 The learner will be able to convert decimals to fractions and fractions to decimals.																														
■ Objective 33 The learner will be able to become proficient in the addition and subtraction of decimal numbers.																														
■ Objective 34 The learner will be able to multiply 2 decimal numbers.																														
■ Objective 35																														

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The learner will be able to divide 2 decimal numbers out to a remainder of zero.																														
Fractions																														
<ul style="list-style-type: none"> Objective 36 The learner will be able to add or subtract fractions and mixed fractions, including finding a lowest common denominator and reducing the answer to its lowest terms. 																														
<ul style="list-style-type: none"> Objective 37 The learner will be able to multiply fractions and/or reduce the answers to lowest terms. 																														
<ul style="list-style-type: none"> Objective 38 The learner will be able to divide two fractions. 																														
<ul style="list-style-type: none"> Objective 39 The learner will be able to reduce a given fraction to its lowest terms. 																														
<ul style="list-style-type: none"> Objective 40 The learner will be able to convert improper fractions to mixed fractions and vice versa. 																														
<ul style="list-style-type: none"> Objective 41 The learner will be able to compare fractions with the same or different denominators. 																														
Geometry																														
<ul style="list-style-type: none"> Objective 42 The learner will be able to apply both the definition and properties of parallelograms to solve problems and write proofs. 																														
<ul style="list-style-type: none"> Objective 43 The learner will be able to recognize the radius and diameter of a circle and measure them. 																														

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● Objective 44 The learner will be able to identify, understand, and apply the following circle terms in both mathematical and geometric contexts: chord, sectors, secant, and tangent.																														
● Objective 45 The learner will be able to identify, understand, and apply the following circle terms in both mathematical and geometric contexts: center, diameter, radius, and semicircle.																														
● Objective 46 The learner will be able to determine properties of circles and their related parts such as arcs, chords, secants, tangents, and other angles, by inductively and deductively formulating and applying logical arguments.																														
● Objective 47 The learner will be able to classify quadrilaterals and solve problems by applying properties of quadrilateral shapes.																														
■ Objective 48 The learner will be able to identify the properties of a square.																														
■ Objective 49 The learner will be able to identify the properties of a rectangle.																														
■ Objective 50 The learner will be able to identify a line segment.																														
■ Objective 51 The learner will be able to identify and define angles which are supplementary.																														

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<p>■ Objective 52 The learner will be able to identify and define vertical angles.</p>																														
<p>■ Objective 53 The learner will be able to identify an isosceles triangle.</p>																														
<p>■ Objective 54 The learner will be able to identify properties of a triangle which make it equilateral.</p>																														
<p>■ Objective 55 The learner will be able to solve real world problems by applying the relationships found within 30-60-90 and 45-45-90 triangles.</p>																														
<p>■ Objective 56 The learner will be able to analyze the properties of triangles.</p>																														
<p>■ Objective 57 The learner will be able to use indirect measurement with similar triangles to make judgments about similar figures.</p>																														
<p>■ Objective 58 The learner will be able to calculate arc length.</p>																														
<p>■ Objective 59 The learner will be able to identify the correct definition and equation of a circle of a specific radius.</p>																														
<p>■ Objective 60 The learner will be able to identify the Pythagorean Theorem.</p>																														
<p>■ Objective 61 The learner will be able to identify Pythagorean triples, such as 3-4-5 and 5-12-13, in right triangles.</p>																														

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<ul style="list-style-type: none"> Objective 62 The learner will be able to use the Pythagorean Theorem to determine an unknown side length of a right triangle. 																														
<ul style="list-style-type: none"> Objective 63 The learner will be able to describe how the side lengths of similar triangles are related. 																														
<ul style="list-style-type: none"> Objective 64 The learner will be able to identify parallel lines. 																														
<ul style="list-style-type: none"> Objective 65 The learner will be able to identify perpendicular lines. 																														
<ul style="list-style-type: none"> Objective 66 The learner will be able to identify right triangles and their properties. 																														
Integers																														
<ul style="list-style-type: none"> Objective 67 The learner will be able to identify what constitutes the set of integers. 																														
Measurement																														
<ul style="list-style-type: none"> Objective 68 The learner will be able to use the appropriate formula to calculate the area of a trapezoid. 																														
<ul style="list-style-type: none"> Objective 69 The learner will be able to calculate the circumference of a circle using the correct formula. 																														
<ul style="list-style-type: none"> Objective 70 The learner will be able to use the appropriate formula to calculate the area of a circle. 																														
<ul style="list-style-type: none"> Objective 71 The learner will be able to calculate the area of a triangle 																														

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using the correct formula.

Number Theory

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● Objective 72 The learner will be able to recognize all the digits in the base-ten number system, and understand the concept of place value for these digits in any number.																														
● Objective 73 The learner will be able to identify and describe ways to determine odd or even numbers and construct models for these numbers.																														
● Objective 74 The learner will be able to identify and calculate numbers expressed in scientific notation.																														
■ Objective 75 The learner will be able to apply an understanding of ratios and ratio comparisons to solve problems.																														
■ Objective 76 The learner will be able to identify prime and composite numbers.																														
■ Objective 77 The learner will be able to demonstrate an understanding of multiples.																														
■ Objective 78 The learner will be able to demonstrate an understanding of factors.																														
■ Objective 79 The learner will be able to apply the rules of divisibility.																														
■ Objective 80 The learner will be able to identify the value of any																														

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number written to the power of zero.																														
Numeration																														
<ul style="list-style-type: none"> Objective 81 The learner will be able to understand the meaning of the equal to (=), greater than (>), and less than (<) symbols. 																														
Percents																														
<ul style="list-style-type: none"> Objective 82 The learner will be able to apply percent concepts in problem solving situations. 																														
Probability/Statistics																														
<ul style="list-style-type: none"> Objective 83 The learner will be able to determine within the context of a real world problem the average of a set of given numbers. 																														
<ul style="list-style-type: none"> Objective 84 The learner will be able to solve problems that involve the calculation of a weighted average. 																														
Problem Solving																														
<ul style="list-style-type: none"> Objective 85 The learner will be able to demonstrate an understanding that a problem can be solved by beginning with the final conditions and working backwards to determine the initial conditions. 																														
<ul style="list-style-type: none"> Objective 86 The learner will be able to obtain problem solutions that are actually algebraic expressions constructed from information in the problem. 																														

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Rational and Irrational Numbers																														
<ul style="list-style-type: none"> Objective 87 The learner will be able to identify rational and irrational numbers. 																														
Real Numbers and the Coordinate Plane																														
<ul style="list-style-type: none"> Objective 88 The learner will be able to explain the relationship between coordinate points, written in (4, 5) form, and where coordinate points lie on the coordinate plane. 																														
<ul style="list-style-type: none"> Objective 89 The learner will be able to understand the properties of positive and negative numbers, know their relative positions on a number line, and correctly perform all four operations involving positive and negative numbers. 																														
<ul style="list-style-type: none"> Objective 90 The learner will be able to develop an intuitive sense of all real numbers. 																														
<ul style="list-style-type: none"> Objective 91 The learner will be able to draw the graph of a line on a coordinate plane using only its slope and y-intercept. 																														
Trigonometry																														
<ul style="list-style-type: none"> Objective 92 The learner will be able to define the trigonometric terms sine, cosine, tangent, secant, cosecant, and cotangent. 																														
<ul style="list-style-type: none"> Objective 93 The learner will be able to derive the Pythagorean trigonometric identities (sine squared of an angle + cosine squared of that angle = 1, etc.). 																														