## Algebra 1 Course Code: 120031001 Pacing Guide

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## $1^{\text {ST }}$ Nine Weeks

$2^{\text {nd }}$ Nine Weeks
I. Quantities and Modeling
A. Quantitative Reasoning
B. Algebraic Models

STEM Lessons - Model Eliciting Activities

- Looking for the best Employment Option
- CollegeReview.com
- Efficient Storage
II. Understanding Functions
A. Functions and Models
B. Patterns and Sequences

STEM Lessons - Model Eliciting Activities

- To The Limit
- My First Credit Card
- Plants vs. Pollutants
- The Friendly Confines or The Nat
III. Linear Functions, Equations, and Inequalities - Part A
A. Linear Functions
B. Forms of Linear Equations

IV. Linear Functions, Equations, and Inequalities - Part B
A. Linear Equations and Inequalities
STEM Lessons - Model Eliciting Activities
- Alternative Fuel Systems
- Preserving Our Marine Ecosystems
- Hybrid-Electric Vehicles vs. Gasoline Powered Vehicles


## V. Statistical Models

A. Multi-Variable Categorical Data
B. One-Variable Data Distributions
C. Linear Modeling and Regression
STEM Lessons - Model Eliciting Activities

- The Music Is On and Popping! Two-way Tables


## VI. Linear Systems

A. Solving Systems of Linear Equations
B. Modeling with Linear Systems

STEM Lessons - Model Eliciting Activities

- Manufacturing Designer Gear T-Shirts
$3^{\text {rd }}$ Nine Weeks
VII. Exponential Relationships
A. Rational Exponents and Radicals
B. Geometric Sequences and Exponential Functions
C. Exponential Equations and Models
STEM Lessons - Model Eliciting Activities
- The Friendly Confines or The Nat - who has the best ballpark?
VIII. Polynomial Operations
A. Adding and Subtracting Polynomials
B. Multiplying Polynomials
IX. Quadratic Functions
A. Graphing Quadratic Functions
B. Connecting Intercepts, Zeros, and Factors
C. Graphing Polynomial Functions
$4^{\text {th }}$ Nine Weeks
X. Quadratic Equations and Modeling
A. Using Factors to Solve Quadratic Equations
B. Using Square Roots to Solve Quadratic Equations
C. Linear, Exponential, and Quadratic Models
STEM Lessons - Model Eliciting Activities
- Ranking Sports Players (Quadratic Equations Practice)
XI. EOC Review
XII. Functions and Inverses
A. Piecewise-Defined Functions
B. Understanding Inverse Functions
C. Graphing Square Root Functions
D. Graphing Cube Root Functions

Total Days Allotted for Instruction
Testing, and "Catch-up" Days:

|  | T | B | Dates |
| :--- | :---: | :---: | :---: |
| Topic X | 16 | 8 | $04 / 01-04 / 23$ |
| Topic XI | 5 | 2 | $04 / 24-04 / 30$ |
| Topic XII | 26 | 13 | $05 / 01-06 / 06$ |

# MIAMI-DADE COUNTY PUBLIC SCHOOLS <br> District Pacing Guide 

## STANDARDS AT A GLANCE

| $1^{\text {ST }}$ Nine Weeks | $2^{\text {nd }}$ Nine Weeks | $3{ }^{\text {rd }}$ Nine Weeks | $4^{\text {th }}$ Nine Weeks |
| :---: | :---: | :---: | :---: |
| I. Quantities and Modeling <br> MAFS.912.A-SSE.1.1a <br> MAFS.912.A-CED.1.1 <br> MAFS.912.A-CED.1.4 <br> MAFS.912.A-REI.1.1 <br> MAFS.912.A-REI.2.3 <br> MAFS.912.N-Q.1.1* <br> MAFS.912.N-Q.1.2* <br> MAFS.912.N-Q.1.3* <br> II. Understanding Functions <br> MAFS.912.F-BF.1.1a <br> MAFS.912.F-IF.1.1 <br> MAFS.912.F-IF.1.2 <br> MAFS.912.F-IF.1.3 <br> MAFS.912.F-IF.2.4 <br> MAFS.912.F-IF.2.5 <br> III. Linear Functions, Equations, and Inequalities - Part A <br> MAFS.912.F-BF.2.3 <br> MAFS.912.F-LE.1.1a,b <br> MAFS.912.F-LE.1.2 <br> MAFS.912.F-LE.2.5 <br> MAFS.912.F-IF.2.6 <br> MAFS.912.F-IF.3.7a <br> MAFS.912.F-IF.3.9 <br> MAFS.912.A-CED.1.2 <br> MAFS.912.A-REI.4.10 <br> *Assessed throughout | IV. Linear Functions, Equations, and Inequalities - Part B <br> MAFS.912.A-CED.1.3 <br> MAFS.912.A-REI.4.11 <br> MAFS.912.A-REI.4.12 <br> MAFS.912.S-ID.3.7 <br> V. Statistical Models <br> MAFS.912.S-ID.1.1 <br> MAFS.912.S-ID.1. 2 <br> MAFS.912.S-ID.1.3 <br> MAFS.912.S-ID.2.5 <br> MAFS.912.S-ID.2.6 <br> MAFS.912.S-ID.3.8 <br> MAFS.912.S-ID.3.9 <br> VI. Linear Systems <br> MAFS.912.A-CED.1.3 <br> MAFS.912.A-REI.3.5 <br> MAFS.912.A-REI.3.6 <br> MAFS.912.A-REI.4.12 | VI. Exponential Relationships <br> MAFS.912.N-RN.1.1 <br> MAFS.912.N-RN.1.2 <br> MAFS.912.N-RN.2.3 <br> MAFS.912.F-BF.1.1a <br> MAFS.912.F-BF.2.3 <br> MAFS.912.F-LE.1.1a,b,c <br> MAFS.912.F-LE.1. 2 <br> MAFS.912.F-LE.1.3 <br> MAFS.912.F-LE.2.5 <br> MAFS.912.F-IF.3.7e <br> MAFS.912.F-IF.3.8b <br> MAFS.912.A-CED.1.1 <br> MAFS.912.A-SSE.2.3c <br> MAFS.912.S-ID.2.6 <br> VIII. Polynomial Operations MAFS.912.A-SSE.1.1b MAFS.912.A-SSE.1.2 MAFS.912.A-APR.1.1 <br> IX. Quadratic Functions MAFS.912.F-BF.2.3 MAFS.912.F-IF.2.4 <br> MAFS.912.F-IF.3.7a MAFS.912.F-IF.3.8a MAFS.912.A-APR.2.3 MAFS.912.A-REI.2.4 | X. Quadratic Equations and Modeling <br> MAFS.912.A-CED.1.2 <br> MAFS.912.A-SSE.1.2 <br> MAFS.912.A-SSE.2.3a <br> MAFS.912.A-REI.2.4a <br> MAFS.912.A-REI.2.4b <br> MAFS.912.F-LE.1.1b <br> XI. EOC REVIEW <br> XII. Functions and Inverses <br> MAFS.912.A-REI.2.3 <br> MAFS.912.F-IF.3.7b <br> MAFS.912.F-IF.3.7c <br> MAFS.912.F-BF.2.4 |
| Total Days Allotted for Instruction, Testing, and "Catch-up" Days: | Total Days Allotted for Instruction, Testing, and "Catch-up" Days: | Total Days Allotted for Instruction, Testing, and "Catch-up" Days: | Total Days Allotted for Instruction, Testing, and "Catch-up" Days: |

MIAMI-DADE COUNTY PUBLIC SCHOOLS
District Pacing Guide

## Algebra 1 Core - H.M.H. Resources

## Unit Resources

Unit Tests - A, B, and C
Performance Assessment

## Module Resources

Module Test B
Common Core Assessment Readiness
Advanced Learners - Challenge Worksheets

## Lesson Resources

Lessons - Work text/Interactive Student Edition
Practice and Problem Solving: A/B
Advanced Learners - Practice and Problem Solving: C


## PMT Preferences

Auto-assign for intervention and enrichment: NO Test and Quizzes
Homework

## Algebra 1 Intensive Math - H.M.H. Resources

## Unit Resources

Math in Careers Video
Assessment Readiness (Mixed Review)

## Module Resources

Module Test Modified
RTI Tier 2 - Strategic Intervention
RtI Skills Module Pre-Test, Skills and RTI Post Test, Skills Worksheets RTI Tier 3 - Intensive Intervention Worksheets

## Lesson Resources

Practice and Problem Solving: D (modified)

RTI Tier 1 - Lesson Intervention Worksheets Reteach

Reading Strategies AND Success for English Learners


## PMT Preferences

Auto-assign for intervention and enrichment: YES
Daily Intervention
Standard-Based Intervention
Course Intervention


## MIAMI-DADE COUNTY PUBLIC SCHOOLS District Pacing Guide

## YEAR AT A GLANCE ACADEMIC SUPPORT

| REPORTING CATEGORY: ALGEBRA AND MODELING $\quad$ \% of Test: 41\% | 2018 Average \% Correct: 37\% |  |  |
| :---: | :---: | :---: | :---: |
| Standards | Previous Grade Standards | Algebra I <br> Topic(s) | Algebra II Standard |
| MAFS.912.A-APR.1.1 <br> Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. | MAFS.6.EE.1.3 <br> MAFS.6.EE.1.4 <br> MAFS.7.EE.1.1 <br> MAFS.8.EE.1.1 | Topic IX | X |
| MAFS.912.A-CED.1.1 <br> Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational, absolute, and exponential functions. $\star$ | $\frac{\text { MAFS.7.EE. } 2.4}{\text { MAFS.8.EE.3.7 }}$ | Topic I Topic VIII | X |
| MAFS.912.A-REI.2.3 <br> Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. | $\begin{aligned} & \text { MAFS. } 7 . \text { EE. } 2.4 \\ & \hline \text { MAFS.8.EE. } 3.7 \end{aligned}$ | Topic I | X |
| MAFS.912.A-CED.1.4 <br> Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V=I R$ to highlight resistance $R$. |  |  |  |
| MAFS.912.A-CED.1.2 <br> Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. | $\frac{\frac{\text { MAFS.8.EE. } 3.8}{\text { MAFS.8.F.1.3 }}}{\frac{\text { MAFS.8.F.2.4 }}{}}$ | Topic III Topic XII | X |
| MAFS.912.A-REI.3.5 <br> Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. | MAFS.8.EE. 3.8 | Topic VI | X |
| MAFS.912.A-REI.3.6 <br> Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. | MAFS.8.EE.3.8 |  |  |
| MAFS.912.A-REI.4.12 <br> Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. |  |  |  |
| MAFS.912.A-CED.1.3 <br> Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. |  | Topic VI | X |

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## YEAR AT A GLANCE ACADEMIC SUPPORT

| REPORTING CATEGORY: ALGEBRA AND MODELING $\quad$ \% of Test: 41\% | 2018 Average \% Correct: 37\% |  |  |
| :---: | :---: | :---: | :---: |
| Standards | Previous Grade Standards | Algebra I <br> Topic(s) | Algebra II Standard |
| MAFS.912.A-REI.1.1 <br> Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. | $\frac{\text { MAFS.7.EE. } 2.4}{\text { MAFS.8.EE.3.7 }}$ | Topic I | X |
| MAFS.912.A-REI.2.4 <br> Solve quadratic equations in one variable. <br> a) Use the method of completing the square to transform any quadratic equation in $x$ into an equation of the form $(x-p)^{2}=q$ that has the same solutions. Derive the quadratic formula from this form. <br> b) Solve quadratic equations by inspection (e.g., for $x^{2}=49$ ), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm b i$ for real numbers $a$ and $b$. | $\frac{\text { MAFS.7.EE.1.1 }}{\text { MAFS.8.EE.1.2 }}$ | Topic X Topic Xi | X |
| MAFS.912.A-REI.4.11 <br> Explain why the x-coordinates of the points where the graphs of the equations $y=f(x)$ and $y=g(x)$ intersect are the solutions of the equation $f(x)=g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. | MAFS.8.EE.3.8 | Topic III | X |
| MAFS.912.A-REI.4.10 <br> Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). | MAFS.8.EE.2.5 | Topic IV |  |
| MAFS.912.A-SSE.2.3 <br> Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. <br> a. Factor a quadratic expression to reveal the zeros of the function it defines. <br> b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. <br> c. Use the properties of exponents to transform expressions for exponential functions. For example the expression can be rewritten as $\left(1.15^{\frac{1}{12}}\right)^{12 t} \approx 1.012^{12 t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is $15 \%$. | MAFS.6.EE. 1.3 MAFS.7.EE.1.1 MAFS.8.EE.1.1 | Topic VIII <br> Topic XI <br> Topic XII | X |
| MAFS. 912.A-SSE.1.1 <br> Interpret expressions that represent a quantity in terms of its context. <br> a. Interpret parts of an expression, such as terms, factors, and coefficients. <br> b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret as the product of $P$ and a factor not depending on $P$. | $\frac{\text { MAFS.6.EE.1.2 }}{\text { MAFS.7.EE.1.2 }}$ | Topic I <br> Topic IX | X |

## MIAMI-DADE COUNTY PUBLIC SCHOOLS District Pacing Guide

## Algebra 1

YEAR AT A GLANCE ACADEMIC SUPPORT

| REPORTING CATEGORY: ALGEBRA AND MODELING ${ }^{\text {a }}$ ( ${ }^{\text {a }}$ of Test: $41 \%$ | 2018 Average \% Correct: 37\% |  |  |
| :---: | :---: | :---: | :---: |
| Standards | Previous Grade Standards | Algebra I <br> Topic(s) | Algebra II Standard |
| MAFS.912.A-SSE.1.2 <br> Use the structure of an expression to identify ways to rewrite it. For example, see $x^{4}-y^{4}$, as $\left(x^{2}\right)^{2}-\left(y^{2}\right)^{2}$ thus recognizing it as a difference of squares that can be factored as $\left(x^{2}-y^{2}\right)\left(x^{2}+y^{2}\right)$. | $\begin{aligned} & \text { MAFS.6.EE.1.3 } \\ & \hline \text { MAFS.7.EE.1.1 } \end{aligned}$ | Topic IX <br> Topic XI <br> Topic XII | X |


| YEAR AT A GLANCE ACADEMIC SUPPORT |  |  |  |
| :---: | :---: | :---: | :---: |
|  | 2018 Average \% Correct: 40\% |  |  |
| Standards | Previous Grade Standards | Algebra 1 <br> Topic(s) | Algebra II Standard |
| MAFS.912.F-BF.2.3 <br> Identify the effect on the graph of replacing $f(x)$ by $f(x)+k, k f(x), f(k x)$, and $f(x+k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. |  | Topic III <br> Topic VIII <br> Topic X | X |
| MAFS.912.F-IF.1.2 <br> Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. | MAFS.6.EE.1.2c |  |  |
| MAFS.912.F-IF.1.1 <br> Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If $f$ is a function and $x$ is an element of its domain, then $f(x)$ denotes the output of $f$ corresponding to the input $x$. The graph of $f$ is the graph of the equation $y=f(x)$. | $\begin{aligned} & \frac{\text { MAFS.8.F.1.1 }}{\text { MAFS.8.F.1.2 }} \\ & \text { MAFS.8.F.1.3 } \end{aligned}$ | Topic II |  |
| MAFS.912.F-IF. 2.5 <br> Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble engines in a factory, then the positive integers would be an appropriate domain for the function. |  | Topic II Topic VIII | X |
| MAFS.912.F-IF.2.4 <br> For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. | MAFS.8.F.2.5 | Topic II Topic X | X |

## MIAMI-DADE COUNTY PUBLIC SCHOOLS <br> District Pacing Guide

## YEAR AT A GLANCE ACADEMIC SUPPORT

| REPORTING CATEGORY: FUNCTIONS AND MODELING ${ }^{\text {a }}$ ( | 2018 Average \% Correct: 40\% |  |  |
| :---: | :---: | :---: | :---: |
| Standards | Previous Grade Standards | Algebra I <br> Topic(s) | Algebra II Standard |
| MAFS.912.F-IF.3.9 <br> Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum. |  | Topic III | X |
| MAFS.912.F-IF.2.6 <br> Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. | MAFS.8.F.2.4 | Topic III | X |
| MAFS.912.S-ID.3.7 <br> Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. | MAFS.8.SP.1.3 | Topic IV |  |
| MAFS.912.F-IF.3.8 <br> Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. <br> a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. <br> b. Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in functions such as $y=(1.02)^{t}, y=(0.97)^{t}, y=(1.01)^{12 t}, y=(0.97)^{\frac{t}{10}}$, and classify them as representing exponential growth or decay. |  | Topic VIII <br> Topic X | X |
| MAFS.912.A-APR.2.3 <br> Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. | MAFS.7.EE.1.1 | Topic X | X |
| MAFS. 912.F-IF.3.7 <br> Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. <br> a. Graph linear and quadratic functions and show intercepts, maxima, and minima. <br> b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. <br> c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. <br> d. Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior. (Algebra II) <br> e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude, and using phase shift. | $\frac{\text { MAFS.8.EE. } 2.5}{\text { MAFS.8.F.1.3 }}$ | Topic III <br> Topic VIII <br> Topic X | X |

## MIAMI-DADE COUNTY PUBLIC SCHOOLS District Pacing Guide

## YEAR AT A GLANCE ACADEMIC SUPPORT

|  | 2018 Average \% Correct: 40\% |  |  |
| :---: | :---: | :---: | :---: |
| Standards | Previous Grade Standards | Algebra 1 <br> Topic(s) | Algebra II Standard |
| MAFS.912.F-LE.1.1 <br> Distinguish between situations that can be modeled with linear functions and with exponential functions. <br> a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. <br> b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. <br> c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. | $\frac{\text { MAFS.8.F.1.3 }}{\text { MAFS.8.F.2.4 }}$ | Topic III <br> Topic VIII <br> Topic XII |  |
| MAFS.912.F-LE.2.5 <br> Interpret the parameters in a linear or exponential function in terms of a context. |  | Topic III Topic VIII | X |
| MAFS.912.F-LE.1.2 <br> Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). | MAFS.8.F.2.4 | Topic III Topic VIII |  |
| MAFS.912.F-BF.1.1 <br> Write a function that describes a relationship between two quantities. <br> a. Determine an explicit expression, a recursive process, or steps for calculation from a context. <br> b. Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model. <br> c. Compose functions. For example, if $T(y)$ is the temperature in the atmosphere as a function of height, and $h(t)$ is the height of a weather balloon as a function of time, then $T(h(t))$ is the temperature at the location of the weather balloon as a function of time. | MAFS.8.F.2.4 | Topic II Topic VIII | X |
| MAFS. 912.F-IF.1.3 <br> Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by $f(0)=f(1)=1, f(n+1)=f(n)+f(n-1)$ for $n \geq 1$. |  | Topic II |  |
| MAFS.912.F-LE.1.3 <br> Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function. |  | Topic VIII |  |

## MIAMI-DADE COUNTY PUBLIC SCHOOLS District Pacing Guide

## Algebra 1

## YEAR AT A GLANCE ACADEMIC SUPPORT



## WIDA

## CAN DO Descriptors: Grade Level Cluster 9-12

Level 1 Entering

## LISTENING

-Point to or show basic parts components, features, characteristics, and properties of objects, organisms, or persons named orally

- Match everyday oral information to pictures, diagrams, or photographs - Group visuals by common traits named orally (e.g., "These are polygons.")
- Identify resources, places, products, figures from oral statements, and visuals
- Answer yes/no or choice questions within context of lessons or personal experiences
- Provide identifying information about self
- Name everyday objects and pretaught vocabulary
- Repeat words, short phrases, memorized chunks of language
- Match visual representations to words/phrases
- Read everyday signs, symbols, schedules, and school-related words/phrases
- Respond to WH- questions related to illustrated text
- Use references (e.g., picture dictionaries, bilingual glossaries, technology)
- Label content-related diagrams, pictures from word/phrase banks - Provide personal information on forms read orally
- Produce short answer responses to oral questions with visual support - Supply missing words in short sentences


## Level 2 Emerging

- Match or classify oral descriptions to real-life experiences or visually- represented, contentrelated examples
- Sort oral language statements according to time frames
- Sequence visuals according to oral directions
- Describe persons, places, events, or objects
- Ask WH- questions to clarify meaning
- Give features of content- based material (e.g., time periods) -Characterize issues, situations, regions shown in illustrations
- Match data or information with its


## source or genre

- Classify or organize information presented in visuals or graphs - Follow multi-step instructions supported by visuals or data - Match sentence-level descriptions to visual representations - Compare content-related features in visuals and graphics - Locate main ideas in a series of related sentences
- Make content-related lists of words, phrases, or expressions -Take notes using graphic organizers or models
- Formulate yes/no, choice and WH- questions from models - Correspond for social purposes (e.g., memos, e-mails, notes)

Level 3 Developing

- Evaluate information in social and academic conversations - Distinguish main ideas from supporting points in oral, contentrelated discourse
- Use learning strategies described orally
- Categorize content-based examples described orally

Suggest ways to resolve issues or
pose solutions

- Compare/contrast features, traits, characteristics using general and some specific language
- Sequence processes, cycles, procedures, or events - Conduct interviews or gather information through oral interaction - Estimate, make predictions or pose hypotheses from models
- Apply multiple meanings of words/phrases to social and academic contexts
- Identify topic sentences or main ideas and details in paragraphs - Answer questions about explicit information in texts
- Differentiate between fact and opinion in text
- Order paragraphs or sequence information within paragraphs

Complete reports from templates - Compose short narrative and expository pieces

- Outline ideas and details using graphic organizers
- Compare and reflect on performance against criteria (e.g., rubrics)


## Level 4 Expanding

Distinguish between multiple meanings of oral words or phrases in social and academic contexts in social and academic contexts - Analyze content-related task discourse

- Categorize examples of genres read aloud
- Compare traits based on visuals and oral descriptions using specific and some technical language
- Take a stance and use evidence to defend it
- Explain content-related issues and concepts
- Compare and contrast points of view
- Analyze and share pros and cons - Analyze and
of choices
- Use and respond to gossip, slang, and idiomatic expressions
- Use speaking strategies (e.g., circumlocution)
- Compare/contrast authors' points of view, characters, information, or events
- Interpret visually- or graphicallysupported information
- Infer meaning from text
- Match cause to effect
- Evaluate usefulness of data or information supported visually or graphically
- Summarize content-related notes from lectures or text
- Revise work based on narrative or oral feedback
- Compose narrative and expository text for a variety of purposes
- Justify or defend ideas and
opinions
- Produce content-related reports


## Level 5 Bridging

- Interpret cause and effect scenarios from oral discourse - Make inferences from oral discourse containing satire, sarcasm, or humor
- Identify and react to subtle differences in speech and register (e.g., hyperbole, satire, comedy) - Evaluate intent of speech and act accordingly
- Give multimedia oral presentations
on grade-level material
- Engage in debates on content-
related issues using technical language
- Explain metacognitive strategies for solving problems (e.g., "Tell me how you know it.")
- Negotiate meaning in pairs or group discussions
- Interpret grade-level literature text
- Draw conclusions from different sources of informational text - Infer significance of data or information in grade-level material - Identify evidence of bias and credibility of source
- Produce research reports from multiple sources
- Create original pieces that represent the use of a variety of genres and discourses - Critique, peer-edit and make recommendations on others' writing from rubrics
- Explain, with details, phenomena, processes, procedures


## Mathematical Practices

MAFS.K12.MP.1.1

## MAFS.K12.MP.2.1

MAFS.K12.MP.3.1

## Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

## Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning

## Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize-to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents-and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

## Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning

## Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and-if there is a flaw in an argument-explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning

# MIAMI-DADE COUNTY PUBLIC SCHOOLS District Pacing Guide 

## Mathematical Practices

| MAFS.K12.MP.4.1 | Model with mathematics. <br> Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose. <br> Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning |
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| MAFS.K12.MP.5.1 | Use appropriate tools strategically. <br> Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts. <br> Context Complexity: Level 2: Basic Application of Skills \& Concepts |
| MAFS.K12.MP.6.1 | Attend to precision. <br> Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions. <br> Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning |

## MIAMI-DADE COUNTY PUBLIC SCHOOLS District Pacing Guide

## Mathematical Practices

MAFS.K12.MP.7.1

## Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see $7 \times$ 8 equals the well-remembered $7 \times 5+7 \times 3$, in preparation for learning about the distributive property. In the expression $x^{2}+9 x+14$, older students can see the 14 as $2 \times 7$ and the 9 as $2+7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5-3(x-y)^{2}$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers $x$ and $y$.

## Context Complexity: Level 2: Basic Application of Skills \& Concepts

MAFS.K12.MP.8.1
Look for and express regularity in repeated reasoning.
Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through ( 1,2 ) with slope 3 , middle school students might abstract the equation $(y-2) /(x-1)=3$. Noticing the regularity in the way terms cancel when expanding $(x-1)(x+1),(x-1)\left(x^{2}+x+1\right)$, and ( $x-$ 1) $\left(x^{3}+x^{2}+x+1\right)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning

## Literacy Standards

## LAFS.910.RST.1.3

LAFS.910.RST.2.4

LAFS.910.RST.3.7

Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

## Context Complexity: Level 2: Basic Application of Skills \& Concepts

Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.

## Context Complexity: Level 2: Basic Application of Skills \& Concepts

Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

## Context Complexity: Level 2: Basic Application of Skills \& Concepts

## LAFS.1112.WHST.1.1

Write arguments focused on discipline-specific content.
a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.
b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.
c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing
e. Provide a concluding statement or section that follows from or supports the argument presented.

## Context Complexity: Level 4: Extended Thinking \&Complex Reasoning

## LAFS.1112.WHST.1.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
a. Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
d. Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.
e. Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

Context Complexity: Level 4: Extended Thinking \&Complex Reasoning

| Literacy Standards |  |
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| LAFS.1112.WHST.2.4 | Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. <br> Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning |
| LAFS.1112.WHST.3.9 | Draw evidence from informational texts to support analysis, reflection, and research. Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning |
| LAFS.910.RST.2.4 | Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics. <br> Context Complexity: Level 2: Basic Application of Skills \& Concepts |
| LAFS.910.SL.1.1 | Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. <br> a. Come to discussions prepared having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. <br> b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed. <br> c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. <br> d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented. <br> Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning |
| LAFS.910.SL.1.2 | Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source. <br> Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning |
| LAFS.910.SL.1.3 | Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence. <br> Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning |
| LAFS.910.SL.2.4 | Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task. <br> Context Complexity: Level 3: Strategic Thinking \& Complex Reasoning |

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