

M/J Grade 8 Pre-Algebra

Course Code: 120507001

2023-2024

Year at a Glance

Please use the code below to join the Schoology Collaborative Group for this course.
(Do not share code with students)

9QSN-6PX5-KF4CH

Middle Grades Math - Grades 6-8 Core/Regular Collaborative Group



MIAMI-DADE COUNTY PUBLIC SCHOOLS
District Pacing Guide
YEAR-AT-A-GLANCE

M/J Grade 8 Pre-Algebra

2023-2024

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Florida's B.E.S.T. Standards Mathematics

First Nine Weeks

49 Days

August 17, 2023 – October 26, 2023

Topic 1: Solve Problems Involving Real Numbers 08/17 – 09/08 (16 Traditional: 8 Block)		Topic 2: Apply Laws of Exponents 09/11 – 10/11 (22 Traditional: 11 Block)	
<i>Lessons</i>	<i>Benchmarks</i>	<i>Lessons</i>	<i>Benchmarks</i>
<ul style="list-style-type: none"> • 1-1: Understand Irrational Numbers • 1-2: Plot, Compare, and Order Real Numbers • 1-3: Evaluate Square Roots and Cube Roots • 1-4: Solve Equations Using Square Roots and Cube Roots 	<ul style="list-style-type: none"> • MA.8.NSO.1.1 • MA.8.NSO.1.2 • MA.8.NSO.1.7 • MA.8.AR.2.3 	<ul style="list-style-type: none"> • 2-1: Use Laws of Integer Exponents • 2-2: Use Powers of 10 to Estimate Quantities • 2-3: Understand Scientific Notation • 2-4: Operations with Numbers in Scientific Notation • 2-5: Extend Laws of Exponents: Algebraic Expressions • 2-6: Multiply Linear Expressions • 2-7: Factor Algebraic Expressions 	<ul style="list-style-type: none"> • MA.8.NSO.1.3 • MA.8.NSO.1.4 • MA.8.NSO.1.5 • MA.8.NSO.1.6 • MA.8.AR.1.1 • MA.8.AR.1.2 • MA.8.AR.1.3
Topic 3: Solve Equations and Inequalities 10/12 – 10/25 (10 Traditional: 5 Block)		Topic 4: Understand Linear Relationships (Continued into next quarter) 10/26 – 12/13 (28 Traditional: 14 Block)	
<i>Lessons</i>	<i>Benchmarks</i>	<i>Lessons</i>	<i>Benchmarks</i>
<p><u>1st 9-Weeks Content</u></p> <ul style="list-style-type: none"> • 3-1: Combine Like Terms to Solve Equations • 3-2: Solve Equations with Variables on Both Sides • 3-3: Solve Multi-Step Equations <p><u>2nd 9-Weeks Content</u></p> <ul style="list-style-type: none"> • 3-4: Equations with No Solutions or Infinitely Many Solutions • 3-5: Solve Two-Step Inequalities 	<ul style="list-style-type: none"> • MA.8.AR.2.1 • MA.8.AR.2.2 	<ul style="list-style-type: none"> • 4-1: Connect Proportional Relationships and Slope • 4-2: Analyze Linear Equations: $y = mx$ • 4-3: Understand the y-Intercept of a Line • 4-4: Write and Graph Linear Equations: $y = mx + b$ • 4-5: Interpret Slope and y-Intercept of a Linear Relationship • 4-6: Understand Systems of Equations • 4-7: Solve Systems by Graphing 	<ul style="list-style-type: none"> • MA.8.AR.3.1 • MA.8.AR.3.2 • MA.8.AR.3.3 • MA.8.AR.3.4 • MA.8.AR.3.5 • MA.8.AR.4.1 • MA.8.AR.4.2 • MA.8.AR.4.3

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Florida's B.E.S.T. Standards Mathematics

Second Nine Weeks

41 Days

October 30, 2022 – January 18, 2024

Topic 4: Understand Linear Relationships
(Continued from prior quarter)

10/27 – 12/13 (28 Traditional: 14 Block)

Lessons

- 4-1: Connect Proportional Relationships and Slope
- 4-2: Analyze Linear Equations: $y = mx$
- 4-3: Understand the y-Intercept of a Line
- 4-4: Write and Graph Linear Equations: $y = mx + b$
- 4-5: Interpret Slope and y-Intercept of a Linear Relationship
- 4-6: Understand Systems of Equations
- 4-7: Solve Systems by Graphing

Benchmarks

- MA.8.AR.3.1
- MA.8.AR.3.2
- MA.8.AR.3.3
- MA.8.AR.3.4
- MA.8.AR.3.5
- MA.8.AR.4.1
- MA.8.AR.4.2
- MA.8.AR.4.3

Topic 5: Define, Evaluate, and Compare Functions

12/14 – 01/18 (14 Traditional: 7 Block)

Lessons

- 5-1: Understand Relations and Functions
- 5-2: Analyze Functions
- 5-3: Construct Functions to Model Linear Relationships
- 5-4: Intervals of Increase and Decrease
- 5-5: Sketch Functions from Verbal Descriptions

Benchmarks

- MA.8.F.1.1
- MA.8.F.1.2
- MA.8.F.1.3

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Florida's B.E.S.T. Standards Mathematics

Third Nine Weeks
50 Days
January 22, 2024 – April 9, 2024

Topic 6: Understanding Relationships Involving Triangles
 01/22 – 02/21 (22 Traditional: 11 Block)

Topic 7: Congruence and Similarity
 02/22 – 03/14 (16 Traditional: 8 Block)

<i>Lessons</i>	<i>Benchmarks</i>	<i>Lessons</i>	<i>Benchmarks</i>
<p><u>2nd 9-Weeks Content</u></p> <ul style="list-style-type: none"> • 6-1: Understand the Pythagorean Theorem <p><u>3rd 9-Weeks Content</u></p> <ul style="list-style-type: none"> • 6-2: Understand the Converse of the Pythagorean Theorem • 6-3: Apply the Pythagorean Theorem to Solve Problems • 6-4: Find Distance in the Coordinate Plane • 6-5: Draw Triangles with Given Sides • 6-6: Solve Problems Using Angle Relationships • 6-7: Interior and Exterior Angles of Triangles • 6-8: Interior Angles of Regular Polygons 	<ul style="list-style-type: none"> • MA.8.GR.1.1 • MA.8.GR.1.2 • MA.8.GR.1.3 • MA.8.GR.1.4 • MA.8.GR.1.5 • MA.8.GR.1.6 	<ul style="list-style-type: none"> • 7-1: Analyze Translations • 7-2: Analyze Reflections • 7-3: Analyze Rotations • 7-4: Describe Dilations • 7-5: Solve Problems Involving Similar Triangles 	<ul style="list-style-type: none"> • MA.8.GR.2.1 • MA.8.GR.2.2 • MA.8.GR.2.3 • MA.8.GR.2.4

Topic 8: Represent Data and Probabilities
(Continued into next quarter)
 03/15 – 04/12 (14 Traditional: 7 Block)

<i>Lessons</i>	<i>Benchmarks</i>
<p><u>3rd 9-Weeks Content</u></p> <ul style="list-style-type: none"> • 8-1: Construct Scatter Plots and Line Graphs • 8-2: Analyze Linear Associations 8-3: Connect Linear Models • 8-4: Determine Outcomes of Repeated Experiments • 8-5: Use Theoretical Probability to Make Predictions <p><u>4th 9-Weeks Content</u></p> <ul style="list-style-type: none"> • Topic 8 Review • Topic 8 Assessment 	<ul style="list-style-type: none"> • MA.8.DP.1.1 • MA.8.DP.1.2 • MA.8.DP.1.3 • MA.8.DP.2.1 • MA.8.DP.2.2 • MA.8.DP.2.3

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Florida's B.E.S.T. Standards Mathematics

Fourth Nine Weeks

40 Days

April 11, 2023 – June 6, 2024

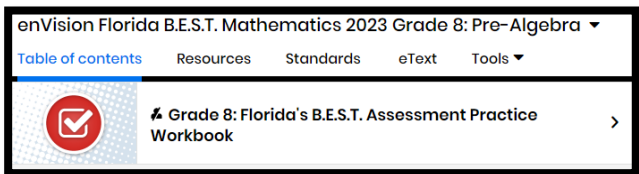
Topic 8: Represent Data and Probabilities
(Continued from prior quarter)

03/15 – 04/12 (14 Traditional: 7 Block)

Topic 9 – F.A.S.T. Spiral Review

04/15 – 04/30 (12 Traditional: 6 Block)

F.A.S.T. PM3 Administration Window 05/01 – 05/31

Lessons	Benchmarks	Lessons	Standards
<p><u>3rd 9-Weeks Content</u></p> <ul style="list-style-type: none"> • 8-1: Construct Scatter Plots and Line Graphs • 8-2: Analyze Linear Associations • 8-3: Connect Linear Models • 8-4: Determine Outcomes of Repeated Experiments • 8-5: Use Theoretical Probability to Make Predictions <p><u>4th 9-Weeks Content</u></p> <ul style="list-style-type: none"> • Topic 8 Review • Topic 8 Assessment 	<ul style="list-style-type: none"> • MA.8.DP.1.1 • MA.8.DP.1.2 • MA.8.DP.1.3 • MA.8.DP.2.1 • MA.8.DP.2.2 • MA.8.DP.2.3 	<p>Grade 8: Florida's B.E.S.T. Assessment Practice Workbook (Accessible Online via Savvas Realize)</p> <div style="text-align: center;">  </div> <p><i>Additional details are available in the Topic 9 Pacing Guide</i></p>	<ul style="list-style-type: none"> • MA.8.NSO.1 • MA.8.AR.1 • MA.8.AR.2 • MA.8.AR.3 • MA.8.AR.4 • MA.8.F.1 • MA.8.GR.1 • MA.8.GR.2 • MA.8.DP.1 • MA.8.DP.2

Topic 10: Strengthen Grade Level Skills Through 3-Act & Pick a Project

05/01 – 06/06 (26 Traditional: 13 Block)

F.A.S.T. PM3 Administration Window 05/01 – 05/31

Lessons & Benchmarks

<ul style="list-style-type: none"> • Topic 1: 3-Act Mathematical Modeling • Topic 1: Pick a Project 1A or 1B • Topic 2: 3-Act Mathematical Modeling • Topic 2: Pick a Project 2A or 2B • Topic 3: 3-Act Mathematical Modeling • Topic 3: Pick a Project 3A or 3B • Topic 4: 3-Act Mathematical Modeling • Topic 4: Pick a Project 4A or 4B 	<table style="width: 100%; border: none;"> <tr> <td style="border: none;">MA.8.AR.2.1</td> <td style="border: none;">• Topic 5: 3-Act Mathematical Modeling</td> <td style="border: none;">MA.8.F.1.1</td> </tr> <tr> <td style="border: none;">MA.8.AR.2.3</td> <td style="border: none;">• Topic 5: Pick a Project 5A or 5B</td> <td style="border: none;">MA.8.F.1.2</td> </tr> <tr> <td style="border: none;">MA.8.AR.3.5</td> <td style="border: none;">• Topic 6: 3-Act Mathematical Modeling</td> <td style="border: none;">MA.8.F.1.3</td> </tr> <tr> <td style="border: none;">MA.8.AR.4.1</td> <td style="border: none;">• Topic 6: Pick a Project 6A</td> <td style="border: none;">MA.8.GR.1.1</td> </tr> <tr> <td style="border: none;">MA.8.AR.4.3</td> <td style="border: none;">• Topic 7: 3-Act Mathematical Modeling</td> <td style="border: none;">MA.8.GR.1.2</td> </tr> <tr> <td style="border: none;">MA.8.NSO.1.1</td> <td style="border: none;">• Topic 7: Pick a Project 7A</td> <td style="border: none;">MA.8.GR.2.1</td> </tr> <tr> <td style="border: none;">MA.8.NSO.1.3</td> <td style="border: none;">• Topic 8: 3-Act Mathematical Modeling</td> <td style="border: none;">MA.8.GR.2.2</td> </tr> <tr> <td style="border: none;">MA.8.NSO.1.4</td> <td style="border: none;">• Topic 8: Pick a Project 8A or 8B</td> <td style="border: none;">MA.8.DP.2.4</td> </tr> <tr> <td style="border: none;">MA.8.NSO.1.6</td> <td></td> <td style="border: none;">MA.8.DP.1.1</td> </tr> <tr> <td style="border: none;">MA.8.NSO.1.7</td> <td></td> <td style="border: none;">MA.8.DP.1.2</td> </tr> <tr> <td></td> <td></td> <td style="border: none;">MA.8.DP.1.3</td> </tr> </table>	MA.8.AR.2.1	• Topic 5: 3-Act Mathematical Modeling	MA.8.F.1.1	MA.8.AR.2.3	• Topic 5: Pick a Project 5A or 5B	MA.8.F.1.2	MA.8.AR.3.5	• Topic 6: 3-Act Mathematical Modeling	MA.8.F.1.3	MA.8.AR.4.1	• Topic 6: Pick a Project 6A	MA.8.GR.1.1	MA.8.AR.4.3	• Topic 7: 3-Act Mathematical Modeling	MA.8.GR.1.2	MA.8.NSO.1.1	• Topic 7: Pick a Project 7A	MA.8.GR.2.1	MA.8.NSO.1.3	• Topic 8: 3-Act Mathematical Modeling	MA.8.GR.2.2	MA.8.NSO.1.4	• Topic 8: Pick a Project 8A or 8B	MA.8.DP.2.4	MA.8.NSO.1.6		MA.8.DP.1.1	MA.8.NSO.1.7		MA.8.DP.1.2			MA.8.DP.1.3
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Florida's B.E.S.T. Standards Mathematics

Mathematical Thinking and Reasoning

Description

MA.K12.MTR.1.1 Actively participate in effortful learning both individually and collectively.	MA.K12.MTR.2.1 Demonstrate understanding by representing problems in multiple ways.
<p>Mathematicians who participate in effortful learning both individually and with others:</p> <ul style="list-style-type: none"> Analyze the problem in a way that makes sense given the task. Ask questions that will help with solving the task. Build perseverance by modifying methods as needed while solving a challenging task. Stay engaged and maintain a positive mindset when working to solve tasks. Help and support each other when attempting a new method or approach. <p>Clarifications: Teachers who encourage students to participate actively in effortful learning both individually and with others:</p> <ul style="list-style-type: none"> Cultivate a community of growth mindset learners. Foster perseverance in students by choosing tasks that are challenging. Develop students' ability to analyze and problem solve. Recognize students' effort when solving challenging problems. 	<p>Mathematicians who demonstrate understanding by representing problems in multiple ways:</p> <ul style="list-style-type: none"> Build understanding through modeling and using manipulatives. Represent solutions to problems in multiple ways using objects, drawings, tables, graphs and equations. Progress from modeling problems with objects and drawings to using algorithms and equations. Express connections between concepts and representations. Choose a representation based on the given context or purpose. <p>Clarifications: Teachers who encourage students to demonstrate understanding by representing problems in multiple ways:</p> <ul style="list-style-type: none"> Help students make connections between concepts and representations. Provide opportunities for students to use manipulatives when investigating concepts. Guide students from concrete to pictorial to abstract representations as understanding progresses. Show students that various representations can have different purposes and can be useful in different situations.
MA.K12.MTR.3.1 Complete tasks with mathematical fluency.	
<p>Mathematicians who complete tasks with mathematical fluency:</p> <ul style="list-style-type: none"> Select efficient and appropriate methods for solving problems within the given context. Maintain flexibility and accuracy while performing procedures and mental calculations. Complete tasks accurately and with confidence. Adapt procedures to apply them to a new context. Use feedback to improve efficiency when performing calculations. <p>Clarifications: Teachers who encourage students to complete tasks with mathematical fluency:</p> <ul style="list-style-type: none"> Provide students with the flexibility to solve problems by selecting a procedure that allows them to solve efficiently and accurately. Offer multiple opportunities for students to practice efficient and generalizable methods. Provide opportunities for students to reflect on the method they used and determine if a more efficient method could have been used. 	

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Mathematical Thinking and Reasoning

Description

MA.K12.MTR.4.1 Engage in discussions that reflect on the mathematical thinking of self and others.	MA.K12.MTR.5.1 Use patterns and structure to help understand and connect mathematical concepts.
<p>Mathematicians who engage in discussions that reflect on the mathematical thinking of self and others:</p> <ul style="list-style-type: none"> Communicate mathematical ideas, vocabulary and methods effectively. Analyze the mathematical thinking of others. Compare the efficiency of a method to those expressed by others. Recognize errors and suggest how to correctly solve the task. Justify results by explaining methods and processes. Construct possible arguments based on evidence. <p>Clarifications: Teachers who encourage students to engage in discussions that reflect on the mathematical thinking of self and others:</p> <ul style="list-style-type: none"> Establish a culture in which students ask questions of the teacher and their peers, and error is an opportunity for learning. Create opportunities for students to discuss their thinking with peers. Select, sequence and present student work to advance and deepen understanding of correct and increasingly efficient methods. Develop students' ability to justify methods and compare their responses to the responses of their peers. 	<p>Mathematicians who use patterns and structure to help understand and connect mathematical concepts:</p> <ul style="list-style-type: none"> Focus on relevant details within a problem. Create plans and procedures to logically order events, steps or ideas to solve problems. Decompose a complex problem into manageable parts. Relate previously learned concepts to new concepts. Look for similarities among problems. Connect solutions of problems to more complicated large-scale situations. <p>Clarifications: Teachers who encourage students to use patterns and structure to help understand and connect mathematical concepts:</p> <ul style="list-style-type: none"> Help students recognize the patterns in the world around them and connect these patterns to mathematical concepts. Support students to develop generalizations based on the similarities found among problems. Provide opportunities for students to create plans and procedures to solve problems. Develop students' ability to construct relationships between their current understanding and more sophisticated ways of thinking.
MA.K12.MTR.6.1 Assess the reasonableness of solutions.	MA.K12.MTR.7.1 Apply mathematics to real-world contexts.
<p>Mathematicians who assess the reasonableness of solutions:</p> <ul style="list-style-type: none"> Estimate to discover possible solutions. Use benchmark quantities to determine if a solution makes sense. Check calculations when solving problems. Verify possible solutions by explaining the methods used. Evaluate results based on the given context. <p>Clarifications: Teachers who encourage students to assess the reasonableness of solutions:</p> <ul style="list-style-type: none"> Have students estimate or predict solutions prior to solving. Prompt students to continually ask, "Does this solution make sense? How do you know?" Reinforce that students check their work as they progress within and after a task. Strengthen students' ability to verify solutions through justifications. 	<p>Mathematicians who apply mathematics to real-world contexts:</p> <ul style="list-style-type: none"> Connect mathematical concepts to everyday experiences. Use models and methods to understand, represent and solve problems. Perform investigations to gather data or determine if a method is appropriate. Redesign models and methods to improve accuracy or efficiency. <p>Clarifications: Teachers who encourage students to apply mathematics to real-world contexts:</p> <ul style="list-style-type: none"> Provide opportunities for students to create models, both concrete and abstract, and perform investigations. Challenge students to question the accuracy of their models and methods. Support students as they validate conclusions by comparing them to the given situation. Indicate how various concepts can be applied to other disciplines.