



Leading B.E.S.T. Mathematics Instruction

October 21, 2021

2021 Florida Charter School Conference



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Agenda

- Florida's B.E.S.T. Mathematics Journey
 - Perspective from School Leadership
 - Perspective from FDOE
- Discussion
- Questions



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B.E.S.T. Standards for Mathematics

Journey Through the B.E.S.T. Standards for Mathematics

2019 – 2020 | Standards Review Process

Removal of instruction from language of standards

Benchmarks written as expectations for students by end of year



2020 – 2021 | Development of Instructional Support and PD

Created and released B1G-M for K-8 and Algebra 1/Geometry and delivered District Lead Professional Learning events

2021 B.E.S.T. District Lead Professional Development Events

- North | July 13-15, 2021
 - 226 participants
- Central | July 20-22, 2021
 - 396 participants
- South | July 27-29, 2021
 - 356 participants
- Continuing learning throughout the 2021-2022 school year with monthly meetings for K-5, 6-8, 9-12 and Leadership tracks.

“Our students are capable of unprecedented success. It is our responsibility to implement the infrastructure necessary to help them thrive.”

Florida B.E.S.T. Standards Mathematics p.1



Development of Florida's B.E.S.T. Standards for Mathematics

Based on Executive Order 19-32 issued on January 31, 2019.

- Florida's B.E.S.T. Standards for Mathematics were written by workgroups consisting of Florida mathematics teacher experts. The teacher experts represent the individuals in Florida who have leadership roles in K-12 mathematics and the Florida College System.



Development of Florida's B.E.S.T. Standards for Mathematics

- Workgroups were focused on writing standards and benchmarks that are clear, concise and provide enough guidance so that districts, test developers, publishers and other related stakeholders are able to align curriculum, instruction and assessment.
- Workgroups drew on the work of the National Council of Teachers of Mathematics (NCTM); expectations from national and international assessments such as ACT, SAT, NAEP and TIMSS; comments from public and specialty stakeholders; and feedback from national mathematics and standards experts.



How?

Consistent Messaging of the B.E.S.T. Standards

- No crosswalk will be created between the MAFS and B.E.S.T.
- These benchmarks **do not**:
 - Require any “unpacking”;
 - Associate with any specific shifts (focus, coherence or rigor); nor
 - Have any specified DOK level.
- Meant to be connected, focusing on all concepts throughout the school year.
- Benchmarks built to be mastery-based with clear and concise language and with the inclusion of clarifications, examples and appendices, educators will be able to align instruction to the needs of ALL of their students.

Math Identity

- Think about when you were a student in school.
- Were you successful in math?
 - Elementary?
 - Middle?
 - High?
- What made you believe this?
- Right now, as an adult, do you believe you are successful in math? What influences your belief the most about your success in math?

K-12 Math Classrooms

- In your group, discuss what you would like a math classroom to look, sound, and feel like in your district or school.



- Think Time
- Rally Robin
- Summarize

- We require **meaningful experiences** and **connections** for better remembering **in long term memory**.
- When experiences are **personally meaningful**, storage and retrieval from long-term memory (LTM) is improved. Our brain filters and discards information it deems unnecessary and **remembers info it can connect to prior knowledge**.



(McREL, 2020)

Mathematical Thinking and Reasoning Standards

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.

MA.K12.MTR.3.1 Complete tasks with [REDACTED] fluency.

MA.K12.MTR.4.1 Engage in discussions that reflect on the [REDACTED] thinking of self and others.

MA.K12.MTR.5.1 Use patterns and structure to help understand and connect [REDACTED] concepts.

MA.K12.MTR.6.1 Assess the reasonableness of solutions.

MA.K12.MTR.7.1 Apply [REDACTED] to real-world contexts.

The Manipulative Myth

- Manipulatives are for struggling students who need them for remediation.



Discussion

- What MTRs would you expect to see using manipulatives?
 - 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.
 - MA.K12.MTR.3.1 Complete tasks with mathematical fluency.
 - 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.
 - MA.K12.MTR.6.1 Assess the reasonableness of solutions.
 - MA.K12.MTR.7.1 Apply mathematics to real-world contexts.

The Fluency Myth

- Timed tests are the best way for students to practice their math facts.

Timed Test

- Let's see how it feels to take a timed test.

PSYCHE!!!

A B.E.S.T. Way of Fluency

1. Roll two 12-sided dice.
2. Multiply the two numbers to find a product or divide if you can.
3. Color in the box for that number.

Try to get 5 in a row. Once someone in the team gets 5 in a row, clear your boards and play again.



Discussion

- What MTRs would you expect to see using games instead of timed tests?
 - 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.
 - MA.K12.MTR.3.1 Complete tasks with mathematical fluency.
 - 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.
 - MA.K12.MTR.6.1 Assess the reasonableness of solutions.
 - MA.K12.MTR.7.1 Apply mathematics to real-world contexts.



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K-12 B.E.S.T. Mathematics Courses

Elementary Grades Courses

- Grade K Mathematics
- Grade 1 Mathematics
- Grade 2 Mathematics
- Foundational Skills for Mathematics K-2
- Grade 3 Mathematics
- Grade 3 Accelerated Mathematics
- Grade 4 Mathematics
- Grade 4 Accelerated Mathematics
- Grade 5 Mathematics
- Foundational Skills for Mathematics 3-5



Grade 3		Grade 4		Grade 5	
MA.3.NSO.1.1	MA.3.AR.2.3	MA.4.NSO.1.2	MA.4.NSO.1.1	MA.5.NSO.1.1	MA.5.AR.2.1
MA.3.NSO.1.2	MA.3.AR.3.1	MA.4.NSO.1.3	MA.4.NSO.1.5	MA.5.NSO.1.2	MA.5.AR.2.2
MA.3.NSO.1.3	MA.3.AR.3.2	MA.4.NSO.1.4	MA.4.NSO.2.3	MA.5.NSO.1.3	MA.5.AR.2.3
MA.3.NSO.1.4	MA.3.AR.3.3	MA.4.NSO.2.1	MA.4.NSO.2.4	MA.5.NSO.1.4	MA.5.AR.2.4
MA.3.NSO.2.1	MA.3.M.1.1	MA.4.NSO.2.2	MA.4.NSO.2.6	MA.5.NSO.1.5	MA.5.AR.3.1
MA.3.NSO.2.2	MA.3.M.1.2	MA.4.NSO.2.5	MA.4.NSO.2.7	MA.5.NSO.2.1	MA.5.AR.3.2
MA.3.NSO.2.3	MA.3.M.2.1	MA.4.FR.1.1	MA.4.FR.1.2	MA.5.NSO.2.2	MA.5.M.1.1
MA.3.NSO.2.4	MA.3.M.2.2	MA.4.FR.1.3	MA.4.FR.2.4	MA.5.NSO.2.3	MA.5.M.2.1
MA.3.FR.1.1	MA.3.GR.1.1	MA.4.FR.1.4	MA.4.AR.1.1	MA.5.NSO.2.4	MA.5.GR.1.1
MA.3.FR.1.2	MA.3.GR.1.2	MA.4.FR.2.1	MA.4.AR.1.3	MA.5.NSO.2.5	MA.5.GR.1.2
MA.3.FR.1.3	MA.3.GR.1.3	MA.4.FR.2.2	MA.4.M.1.1	MA.5.FR.1.1	MA.5.GR.2.1
MA.3.FR.2.1	MA.3.GR.2.1	MA.4.FR.2.3	MA.4.M.1.2	MA.5.FR.2.1	MA.5.GR.3.1
MA.3.FR.2.2	MA.3.GR.2.2	MA.4.AR.1.2	MA.4.M.2.1	MA.5.FR.2.2	MA.5.GR.3.2
MA.3.AR.1.1	MA.3.GR.2.3	MA.4.AR.2.1	MA.4.M.2.2	MA.5.FR.2.3	MA.5.GR.3.3
MA.3.AR.1.2	MA.3.GR.2.4	MA.4.AR.2.2	MA.4.DP.1.1	MA.5.FR.2.4	MA.5.GR.4.1
MA.3.AR.2.1	MA.3.DP.1.1	MA.4.AR.3.1	MA.4.DP.1.2	MA.5.AR.1.1	MA.5.GR.4.2
MA.3.AR.2.2	MA.3.DP.1.2	MA.4.AR.3.2	MA.4.DP.1.3	MA.5.AR.1.2	MA.5.DP.1.1
		MA.4.GR.1.1		MA.5.AR.1.3	MA.5.DP.1.2
		MA.4.GR.1.2			
		MA.4.GR.1.3			
		MA.4.GR.2.1			
		MA.4.GR.2.2			
Grade 3 Accelerated Mathematics			Grade 4 Accelerated Mathematics		

Middle Grades Courses

- Grade 6 Mathematics
- Grade 6 Accelerated Mathematics
- Grade 7 Mathematics
- Grade 7 Accelerated Mathematics
- Grade 8 Mathematics
- Foundational Skills for Mathematics 6-8

6-8 B.E.S.T. Mathematics Courses

- M/J Grade 6 Accelerated Mathematics

General Information

Course Number: 1205020	Course Type: Core Academic Course
Course Length: Year (Y)	Course Level: 3
Course Attributes: Honors, Class Size Core Required	Grade Level(s): 6, 7
Course Path: Section Grades PreK to 12 Education Courses > Grade Group Grades 6 to 8 Education Courses > Subject Mathematics > SubSubject General Mathematics > Abbreviated Title M/J GR 6 ACCEL MATH	
Educator Certification: Mathematics (Grades 6-12) or Middles Grades Mathematics (Middle Grades 5-9)	

<http://www.fldoe.org/academics/standards/subject-areas/math-science/mathematics/bestmath.stml>



Grade 6		Grade 7		Grade 8	
MA.6.NSO.1.1	MA.6.AR.2.4	MA.7.NSO.2.1	MA.7.NSO.1.1	MA.8.NSO.1.1	MA.8.F.1.1
MA.6.NSO.1.2	MA.6.AR.3.1	MA.7.NSO.2.2	MA.7.NSO.1.2	MA.8.NSO.1.2	MA.8.F.1.2
MA.6.NSO.1.3	MA.6.AR.3.2	MA.7.NSO.2.3	MA.7.AR.2.2	MA.8.NSO.1.3	MA.8.F.1.3
MA.6.NSO.1.4	MA.6.AR.3.3	MA.7.AR.1.1	MA.7.AR.3.3	MA.8.NSO.1.4	MA.8.GR.1.1
MA.6.NSO.2.1	MA.6.AR.3.4	MA.7.AR.1.2	MA.7.AR.4.1	MA.8.NSO.1.5	MA.8.GR.1.2
MA.6.NSO.2.2	MA.6.AR.3.5	MA.7.AR.2.1	MA.7.AR.4.2	MA.8.NSO.1.6	MA.8.GR.1.3
MA.6.NSO.2.3	MA.6.GR.1.1	MA.7.AR.3.1	MA.7.AR.4.3	MA.8.NSO.1.7	MA.8.GR.1.4
MA.6.NSO.3.1	MA.6.GR.1.2	MA.7.AR.3.2	MA.7.AR.4.4	MA.8.AR.1.1	MA.8.GR.1.5
MA.6.NSO.3.2	MA.6.GR.1.3	MA.7.GR.1.1	MA.7.AR.4.5	MA.8.AR.1.2	MA.8.GR.1.6
MA.6.NSO.3.3	MA.6.GR.2.1	MA.7.GR.1.2	MA.7.GR.1.3	MA.8.AR.1.3	MA.8.GR.2.1
MA.6.NSO.3.4	MA.6.GR.2.2	MA.7.DP.1.1	MA.7.GR.1.4	MA.8.AR.2.1	MA.8.GR.2.2
MA.6.NSO.3.5	MA.6.GR.2.3	MA.7.DP.1.2	MA.7.GR.1.5	MA.8.AR.2.2	MA.8.GR.2.3
MA.6.NSO.4.1	MA.6.GR.2.4	MA.7.DP.1.3	MA.7.GR.2.1	MA.8.AR.2.3	MA.8.GR.2.4
MA.6.NSO.4.2	MA.6.DP.1.1	MA.7.DP.2.1	MA.7.GR.2.2	MA.8.AR.3.1	MA.8.DP.1.1
MA.6.AR.1.1	MA.6.DP.1.2	MA.7.DP.2.2	MA.7.GR.2.3	MA.8.AR.3.2	MA.8.DP.1.2
MA.6.AR.1.2	MA.6.DP.1.3	MA.7.DP.2.3	MA.7.DP.1.4	MA.8.AR.3.3	MA.8.DP.1.3
MA.6.AR.1.3	MA.6.DP.1.4	MA.7.DP.2.4	MA.7.DP.1.5	MA.8.AR.3.4	MA.8.DP.2.1
MA.6.AR.1.4	MA.6.DP.1.5			MA.8.AR.3.5	MA.8.DP.2.2
MA.6.AR.2.1	MA.6.DP.1.6			MA.8.AR.4.1	MA.8.DP.2.3
MA.6.AR.2.2				MA.8.AR.4.2	
MA.6.AR.2.3				MA.8.AR.4.3	
Grade 6 Accelerated Mathematics			Grade 7 Accelerated Mathematics		

Progressions from Secondary to Postsecondary

- Florida Student Success Center established workgroups to identify current challenges in mathematics pathways and develop policy and practice recommendations to improve student achievement across Florida's education systems.
- Within 9-12, benchmarks were developed to support the work of the Mathematics Re-Design project.

<https://www.floridacollegesystemfoundation.org/fssc-math-redesign>

Progressions from Secondary to Postsecondary

- Three pathways at postsecondary level
 - College Algebra
 - Creating connections of equations and functions to real-world context and modeling.
 - College Statistics
 - Strengthening basic algebraic skills as relates to data analysis; developing understanding of probability theory; analyzing and interpreting statistical graphs and tables.
 - College Liberal Arts
 - Creating connections within various strands including algebraic reasoning, geometric reasoning, data analysis and probability, and logic and set theory.

High School Courses

- Algebra I
- Algebra I Honors
- Algebra I-A
- Algebra I-B
- Geometry
- Geometry Honors
- Math for Data and Financial Literacy
- Math for Data and Financial Literacy Honors
- Probability and Statistics Honors
- Algebra II
- Algebra II Honors
- Math for College Algebra
- Math for College Liberal Arts
- Math for College Statistics
- Precalculus Honors
- Calculus Honors
- Discrete Math Honors
- Foundational Skills in Mathematics 9-12*



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B.E.S.T. Standards for Mathematics Resources

FDOE Website

Mathematics

B.E.S.T. Standards for Mathematics

The Florida Department of Education is excited to announce Florida's Benchmarks for Excellent Student Thinking (B.E.S.T.) Standards for Mathematics were adopted by the State Board of Education on February 12, 2020. Additionally, on September 23, 2020 the SBE approved the amendment to Rule 6A-1.09412, Course Requirements – Grades K-12 Basic and Adult Secondary Programs. This amendment adopted ELA, mathematics and non-ELA and non-mathematics subject area course descriptions that include the B.E.S.T. Standards for English Language Arts and Mathematics. The B.E.S.T. Standards for Mathematics will be fully implemented in the 2022-2023 school year along with aligned instructional materials and statewide assessments.

- [Florida's B.E.S.T. Standards for Mathematics \(PDF\)](#)
- [Mathematical Thinking and Reasoning Standards \(PDF\)](#)
- [Mathematical Thinking and Reasoning Standards Poster \[To be printed as 24x36\] \(PDF\)](#)

B.E.S.T. Planning for Learning and Instruction

The following webpage is intended to provide course information, instructional guides and other resources to support the learning and instruction of the B.E.S.T. Standards for Mathematics.

- [B.E.S.T. Standards for Mathematics](#)

B.E.S.T. Professional Learning for Mathematics

<https://www.fldoe.org/academics/standards/subject-areas/math-science/mathematics/>

FDOE Website

B.E.S.T Standards for Mathematics

K-12 B.E.S.T. Mathematics Courses, Instructional Guides and Pathways

In 2018, the Florida Student Success Center established workgroups to identify current challenges in mathematics pathways and develop policy and practice recommendations to improve student achievement across Florida's education system. Courses and mathematics pathways aligned to the B.E.S.T. Standards were developed to support the work of the Mathematics Re-Design Project.

- [Mathematics Re-Design Project](#)

Course Descriptions and the B.E.S.T. Instructional Guides for Mathematics (B1G-M) assist educators with planning for student learning and instruction aligned to Florida's B.E.S.T. Standards for Mathematics. These guides are designed to aid high-quality instruction through the identification of components that support the teaching and learning of the B.E.S.T. Mathematics standards and benchmarks. These guides include an analysis of information related to the B.E.S.T. Standards within each course, the instructional emphasis and aligned resources. The B1G-M includes an analysis of information related to the B.E.S.T. Standards within each specific mathematics course, the instructional emphasis and aligned resources. The B1G-M was created in collaboration with educational stakeholders across the state of Florida. Each of these guides will serve as a foundation to professional development prior to implementation in the 2022-2023 school year. Please note that the instructional support guides will be released spring 2021 and will continue to undergo edits as necessary.

- [Instructional Guidance for Transition to the New B.E.S.T. Standards for Mathematics](#) (PDF)
- [B.E.S.T. Instructional Guide for Mathematics Components](#) (PDF)
- Elementary Grades Mathematics Courses
 - [Grade Kindergarten](#) (PDF)
 - [Grade Kindergarten B1G-M](#) (PDF)

<https://www.fldoe.org/academics/standards/subject-areas/math-science/mathematics/bestmath.stml>

B.E.S.T. Instructional Guide for Mathematics

- Intended to assist educators with planning for student learning and instruction aligned to B.E.S.T. Standards.
- Includes an analysis of information related to the B.E.S.T. Standards within this specific mathematics course, the instructional emphasis and aligned resources.
 - Connecting Benchmarks
 - Instructional Strategies
 - Common Misconceptions and Errors
 - Instructional Tasks and Instructional Items

B.E.S.T. Instructional Guide for Mathematics

- Grade Kindergarten
 - <https://www.fldoe.org/core/fileparse.php/7576/urlt/B1G-M-K.pdf>
- Grade 4
 - <https://www.fldoe.org/core/fileparse.php/7576/urlt/Grade4B1G-M.pdf>
- Grade 7
 - <https://www.fldoe.org/core/fileparse.php/7576/urlt/Grade7B1G-M.pdf>
- Algebra 1
 - <https://www.fldoe.org/core/fileparse.php/7576/urlt/Algebra-1-B1G-M.pdf>

Transition to the B.E.S.T. Standards

- Instructional Guidance for Transition to the New B.E.S.T. Standards for Mathematics
 - Provides educators with an overview of major changes in mathematical concepts within the courses incorporating the Benchmarks for Excellent Student Thinking (B.E.S.T.) Standards for Mathematics as compared to the current courses utilizing the Mathematics Florida Standards (MAFS).



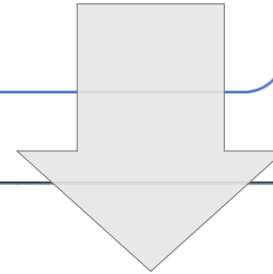
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Continuing Florida's B.E.S.T. Mathematics Journey

Journey Through the B.E.S.T. Standards for Mathematics

2021 – 2022 | Professional Development and Implementation

Develop Tier 2/3 resources for B1G-M, develop B1G-M for 9-12 courses and continue professional development



2022 – 2023 | Implementation

Aligned instructional materials and assessment implemented with the B.E.S.T. Standards for Mathematics

B.E.S.T. Access Points

- To align to both the federal terminology and the adopted standards, the former term of Florida Standards Access Points has been revised to The Benchmarks for Excellent Student Thinking (B.E.S.T.) Access Points-Alternate Academic Achievement Standards (AP-AAAS) for English Language Arts and Mathematics.
- The B.E.S.T AP-AAAS for ELA and Math are only available for grade 3-12.

<https://www.fldoe.org/core/fileparse.php/18736/urlt/AccessPointsMath.pdf>

Aligning Assessments & Materials

- Please reach out to the [Office of Assessment](#) for any questions regarding assessments.
- Instructional Materials Timeline
 - November 2020 – Instructional Materials Specifications and Course Call
 - April – May 2021 – Intent to Bid
 - June 2021 – Bid Details, legal submission of bid
 - July 2021 – Materials due to department
 - August 2021 – Call for Reviewers
 - September 2021 – Review Period begins
 - Spring 2022 – Adoption Report
 - April 1, 2022 – Contract Period begins

<https://www.fldoe.org/academics/standards/instructional-materials/>

2022 B.E.S.T. Mathematics Professional Learning Events

- Participants can choose to attend one of four tracks: K-5, 6-8, 9-12 and Leadership.
- Locations
 - North, Leon County
 - June 6 – 10, 2022
 - Central, Osceola County
 - June 20 – 24, 2022
 - South, St. Lucie County
 - June 27 – July 1, 2022



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Discussion

Discussion | Think Forward

- How do you help your stakeholders understand the magnitude of the transition to the B.E.S.T. Standards?
- How could you ensure sustained support for teachers throughout the 2022-23 school year and beyond? (not one moment...what is sustained support?)
- How do you ensure the B.E.S.T. Standards are taught with fidelity?

Questions and Feedback

- Questions?
- Please provide your feedback using the QR code below.



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