

ISC General Meeting Minutes

Tuesday, March 10, 2015, 9:30 am, DAO

ISC Business

Deb Rocco, ISC Co-President, began the meeting with several general announcements.

The ISC is currently accepting nominations for open positions on the Executive Committee for the 2015-16 school year. A slate will be presented at the April ISC Meeting on April 14, 2015.

ISC MARCH HOT TOPIC - Changes in Math Sequence and Shifts in PSSA Testing

(Please note that the District will again be presenting this information on March 24, 2015, at 7:30 pm at Welsh Valley Middle School.)

Changes in Math Sequence

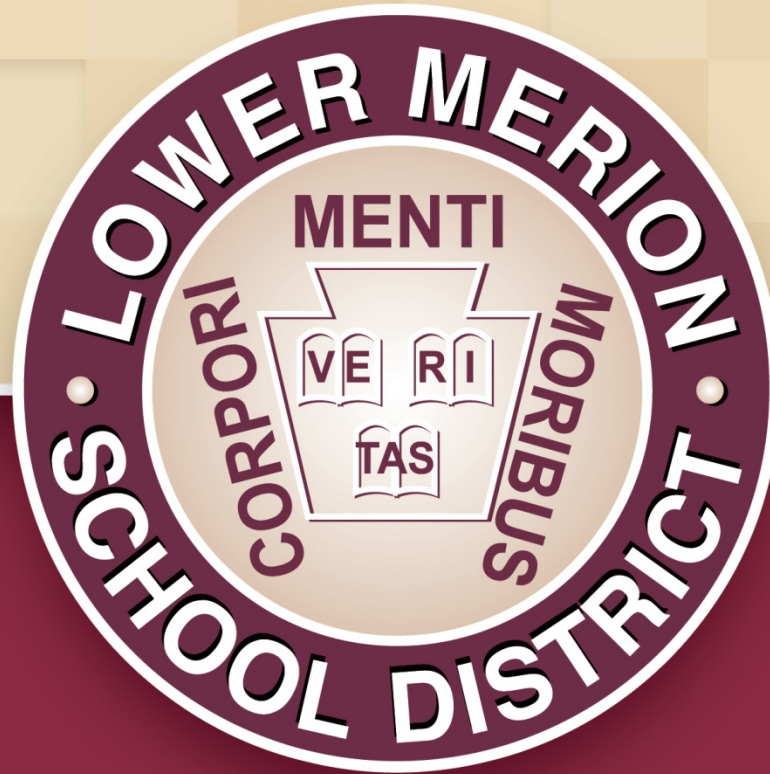
Mr. Arthur Mitchell, LMSD Supervisor – Secondary Math, Science, Technology & Engineering, FCS, Health/PE, presented information about changes to the math sequence that will impact middle and high school students beginning in the 2015-16 school year.

A copy of Mr. Mitchell's PowerPoint presentation is included with these minutes. In addition, information about the change in the secondary math curriculum, including frequently asked questions and responses, can be viewed by clicking this [link](#) to the LMSD website. In the 'Related Files' shown on the right hand side of the linked webpage is the additional information.

Shifts in PSSA Testing

Dr. Geraldine Fitzgerald-Doria, Director of Elementary Education, and Ms. Marcy Hockfield, Interim Director of Secondary Education, discussed a shift in PSSA testing. A copy of their PowerPoint is included with these minutes. In addition, a more extensive two-part presentation that included the same topic, as well as information about the PA Core, was shown at the February 17, 2015 LMSD Regular Board Meeting and can viewed by clicking on this [link](#) to the LMSD website.

Update on Curriculum, Instruction and Assessment Shifts



Presented to the School Board ♦ February 9, 2015

LOWER MERION SCHOOL DISTRICT

COLLEGE AND CAREER READINESS

Common Core Goals

- Graduates are prepared with key skills in English and math so that they are ready for desired postsecondary outcomes
- Being ready for college and career upon graduation is different than being eligible for graduation

LMSD Goals- The Core⁺

- Our focus has always been on readiness
- Being “ready” is more than the Core
 - Our focus is also on social, emotional and physical wellness
 - Our focus is also on opportunities for service and to study the arts, technology and world language

IMPLEMENTATION ACTION PLAN

In 2013, these action steps were identified to make PA Core shifts:

- Align curriculum and District assessments to PA Core
- Provide professional learning
 - To understand PA Core literacy and math shifts *and* implications of these shifts on curriculum
 - To use instructional practices and strategies that help students to more deeply learn skills
- Increase instructional time
 - For writing
 - For enrichment, review and remediation during the school day
- Integrate technology
- Embrace a culture of change

6 PA CORE SHIFTS IN ENGLISH LANGUAGE ARTS (ELA)

- Balance literary and informational texts
- Build knowledge in the disciplines
- Staircase of complexity
- Text based answers
- Write from sources
- Know and use academic vocabulary

STUDENT OUTCOMES WITH THE ELA PA CORE

- Read more in general and from a variety of texts
- Think more deeply about text, it's structure, meaning, inferences and implications
- Return to text for evidence in discussion and writing
- Write more, for a variety of purposes and consider grammar
- Understand and use academic vocabulary

CURRICULUM IMPLICATIONS WITH THE ELA PA CORE

- More:
 - Non-fiction reading
 - Cross-content reading
 - Close reading, such as analyzing author's purpose, craft, style and vocabulary
 - Writing and speaking for a variety of purposes
 - Citing evidence to connect writing and reading
 - Grammar and its importance in writing

ACTION TAKEN: ALIGNED CURRICULUM TO ELA PA CORE

FROM LEGACY STANDARDS

- Comprehension of literary text after reading
- Reading, writing, speaking and listening skills as learned in ELA classes; reading was prioritized

TO PA CORE STANDARDS

- Comprehension of literary and information texts in different content areas before, during and after reading
- Reading, writing, speaking and listening skills as learned in ELA, social studies and science and technology; reading and writing are balanced

ACTION TAKEN: ALIGNED CURRICULUM TO ELA PA CORE

FROM LEGACY STANDARDS

- Comprehension was the goal
- Demonstrate comprehension by identifying elements, such as characterization and theme, and using evidence from reading and other sources, such as background knowledge

TO PA CORE STANDARDS

- Comprehension is foundational and analysis builds from it; analysis includes a close reading to determine the elements of structure and complexity of meaning
- Identify, interpret and analyze why and how elements, such as characterization and theme, were used, citing evidence from text only

ACTION TAKEN: ALIGNED CURRICULUM TO ELA PA CORE

FROM LEGACY STANDARDS

- Writing and grammar were de-emphasized and separated from reading; the focus was on process and three modes
- Identify and interpret meaning of words and phrases

TO PA CORE STANDARDS

- Writing is of equal weight as reading, with attention to grammar, modes that address cross-curricular writing, and writing to demonstrate understanding of reading; the reading-writing connection is emphasized
- Demonstrate understanding of words, phrases and figurative language with emphasis on academic vocabulary

ACTION TAKEN: ALIGNED CURRICULUM TO ELA PA CORE AND PROVIDED PROFESSIONAL LEARNING

- Explicitly stated reading and writing targets and recommendations for instruction
- Provided extensive learning through grade-level teams and Professional Learning Communities (PLCs):
 - Writing instruction
 - Grammar instruction
 - Reading-writing connection
 - Close analytical reading instruction
 - Content area literacy skill instruction
- Developed secondary writing program which links to elementary
 - Created K-12 grammar scope and sequence

ACTION TAKEN: ALIGNED DISTRICT ASSESSMENTS TO ELA PA CORE

Elementary-level

- Writing assessment with anchor papers for providing consistent feedback
- Reading benchmarks aligned

Secondary-level

- Writing assessment with anchor papers for providing consistent feedback
- High school specific Keystone Literature Diagnostic Assessment provides student-specific skills data to teachers
- Unit, midterm and final exams in process of revision
- Middle school benchmarks to be implemented in 2015-2016

ACTION TAKEN: REALLOCATED INSTRUCTIONAL TIME FOR ELA

Elementary-level

- WIN time, a dedicated 30 minutes, three times per week, for practice, extension and intervention
- Dedicated 30-45 minutes for writing within Language Arts Block

ACTION TAKEN: INTEGRATED TECHNOLOGY

ELEMENTARY-LEVEL

- Use of Study Island, an on-line program, at the intermediate level as an instructional supplement
- Use of reading and writing iPad apps at the primary level

SECONDARY-LEVEL

- Data-based identification of students needing support through expanded use of Achieve 3000: Teen Biz, an on-line adaptive program
 - PA Core skills practice and application based on non-fiction text
 - Data show growth toward individualized goals
 - Every 6th grade student has access

ADDITIONAL ACTIONS TAKEN TO SUPPORT STUDENTS

ELEMENTARY- LEVEL

- **Extended Day Kindergarten**
- **Realigned reading support**
- **Realigned After School Program**

SECONDARY- LEVEL

Realigned reading support depending on individual needs

- In Excel and PASS classes
- In small group instruction
- **Reading Specialist PLCs**
 - Ongoing review of data and instructional shifts
- **SMART Reading/Writing revision**
- **Write In**

ADDITIONAL ACTIONS TAKEN TO SUPPORT STUDENTS

Enrichment-Engagement Programs to enhance the achievement of our students of color

- RARE
- BRAIN STEM
- POWER Scholars
- Becton Scholars

6 PA CORE SHIFTS IN MATHEMATICS

- Focus
- Coherence
- Fluency
- Deep Understanding
- Applications
- Dual Intensity

INSTRUCTIONAL IMPLICATIONS OF THE MATH PA CORE

Standards for Mathematical Practice

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

ACTION TAKEN: ALIGNED CURRICULUM TO MATH PA CORE

| Grade | Most Significant Shifts in the Math PA Core |
|--------------|--|
| K | Numbers and Operations- Decomposing teen numbers into tens and ones and comparing numbers and quantities |
| 1 | Numbers and Operations- Understanding and applying properties of operations to addition and subtraction (e.g. commutative and associative) |
| 2 | Numbers and Operations- Developing thorough understanding of base ten numbers through thousands place and comparing base ten numbers, up to 3-digit, using symbols $>$, $<$ and $=$ |
| 3 | Numbers and Operations- Comparing equivalent fractions and representing them on number lines |
| 4 | Measurement- Converting measurements and measuring angles with a protractor |
| 5 | Numbers and Operations- Demonstrating depth of understanding of all fraction and decimal operations and real-world applications of those operations |

ALIGNED CURRICULUM TO MATH PA CORE

New to Kindergarten

- **Fluently add and subtract within 5**
- **Compose and decompose numbers 11 to 19**
- **Identify and describe 2-D and 3-D shapes**
- **Compose simple shapes to form larger shapes**

New to 1st Grade

- **Counting sequence to 120**
- **Comparing symbols ($<$, $>$, $=$)**
- **Properties of operations, such as commutative and associative**
- **Partitioning circles and squares into halves, fourths and quarters**

ALIGNED CURRICULUM TO MATH PA CORE

New to 2nd Grade

- Addition with rectangular array
- Count within 1,000 by 5s, 10s and 100s
- Mentally add and subtract by 10 and 100
- Measurement concepts
- Line plots, picture graphs and bar graphs

New to 3rd Grade

- Area and perimeter
- Fractions
 - Equivalent
 - Comparing and representing on a number line
- Measurement to $\frac{1}{4}$ inch
- Display data on line plots
- Multi-step word problems

ALIGNED CURRICULUM TO MATH PA CORE

New to 4th Grade

- **Multiply a fraction by a whole number**
- **Conversion of measurements**
- **Angle and angle measurements**
- **Lines of symmetry**
- **More multi-step word problems**

New to 5th Grade

- **Multiply and divide fractions**
- **Coordinate system**
- **Hierarchy of two-dimensional figures**
- **Line plot to display measurements**
- **More multi-step word problems**

ACTION TAKEN: ALIGNED CURRICULUM TO MATH PA CORE

| Grade | Most Significant Shifts in the Math PA Core |
|--------------|---|
| 6 | Numbers and Operations- Understand ratio concepts and use ratio reasoning to solve problems |
| 7 | Algebraic Concepts- Graph the solution set for inequalities and solve 2-step equations and inequalities |
| 8 | Geometry- Understand rotations, reflections and translations and know the formulas for volume and be able to apply them |

ACTION TAKEN: ALIGNED CURRICULUM TO MATH PA CORE

New to 6th-8th Grades

Analysis of relationships between dependent and independent variables

Measurement is either removed or incorporated into geometry

Rotation, reflection, translation, and transformation in geometry

Interpret and solve systems of equations

ACTION TAKEN: ALIGNED CURRICULUM TO MATH PA CORE AND PROVIDED PROFESSIONAL LEARNING

- Resources provided to support each unit based on state documents
- Provided professional learning to:
 - Examine PA Core shifts and align instructional expectations
 - Stress conceptual understanding along with traditional procedural fluency
 - Transfer concepts to new higher level mathematics
 - Facilitate elementary to middle school curriculum articulation
 - Embed literacy into mathematics instruction

ACTION TAKEN: ALIGNED DISTRICT ASSESSMENTS TO THE MATH PA CORE

ELEMENTARY-LEVEL

- Unit tests and benchmarks revised
- Daily Routine questions refined

SECONDARY-LEVEL

- Benchmark assessments in middle school to monitor student progress toward end of year goals and state assessment readiness
- Redesigned assessments to reflect shifts

ACTION TAKEN: REALLOCATED INSTRUCTIONAL TIME

Elementary-Level

- WIN time, a dedicated 30 minutes, three times per week, for practice, extension and intervention
- Dedicated 30-45 minutes for writing within Language Arts Block

ACTION TAKEN: INTEGRATED TECHNOLOGY

Elementary-Level

Use of DreamBox Learning, an on-line adaptive program, at all levels

Use of math iPad apps at the primary level

ADDITIONAL ACTIONS TAKEN TO SUPPORT STUDENTS

ELEMENTARY-LEVEL

During the school day

- Realigned reading support
- Wider use of guided math groups

Beyond the school day

- Extended Day Kindergarten
- Realigned After School Program
- After school STEM programs

SECONDARY-LEVEL

During the school day

- Realigned reading support
 - In small group instruction
 - In Excel and PASS classes
- Reading Specialist PLCs
 - Ongoing review of data and instructional practice

Beyond the school day

- Revised SMART Reading/ Writing and Math Programs
- Write In

ACTION TAKEN: INTEGRATED TECHNOLOGY

Expanded e-Book and e-Textbook use

- Wider use of on-line simulations, instructional videos and other digital media resources
- Introduction of History Alive! software on Chromebooks at the middle schools
- Google Drive used to support collaboration during and outside of class
- **Wider use of “flipped” classrooms at the middle and high schools to free more in-class time for content application**

K-12 Blackboard Learning Management System Pilot

- Total of 26 K-12 teachers in pilot during 2014-2015 school year
- Will increase pilot participation during the 2015-2016 school year

LMSD PA CORE AND PSSA STANCE

SUPPORT

- Emphasis on college and career readiness
- Focus on depth and complexity
- Integration of skills across content areas
- System for measuring growth

DO NOT SUPPORT

- Timeline for implementation
- Lack of funding
- Approach to assessment
 - One measure
 - High-stakes for students and teachers
 - Disrupts instruction

ACCOUNTABILITY

- “Score fluctuations [on assessments measuring PA Core Standards] are expected during this transition period as schools realign their curriculum and educational program.” Tim Eller of PDE
- “There will not be instant results, but instead slow progress over time.”
- “The assessments [aligned to Core Standards] are going to be different and there are going to be growing pains. When the initial assessment results come out, they may be lower.” Jim Meadows of Washington Education Association

NEW ELA PSSA

Old PSSA:

- Reading separately assessed in grades 3, 4, 5, 6, 7 and 8
- Writing separately assessed in grades 5 and 8

New PSSA:

- Reading and Writing are assessed together in grades 3, 4, 5, 6, 7 and 8*

* Will result in approximately 8 hours of additional testing

NEW ELA PSSA QUESTION TYPES

| <i>Question Type</i> | <i>Description</i> | <i># of Questions / Points</i> |
|---|--|--|
| Evidence Based Selected Response (EBSR) | <ul style="list-style-type: none"> Evidence-based response to a literature or informational passage <p>Two –part questions</p> <ul style="list-style-type: none"> Part One: Passage analysis / four choices Part Two: Based on answer to Part One; may have more than one correct response and more than four answer choices | <ul style="list-style-type: none"> 3 core 2-point items 3 core 3-point items |

| <i>Question Type</i> | <i>Description</i> | <i># of Questions / Points</i> |
|-------------------------------|---|--|
| Text Dependent Analysis (TDA) | <ul style="list-style-type: none"> Passage-based essay response to literature or informational text Involves inference and synthesis | <ul style="list-style-type: none"> 1 core – 4-point Holistic scoring: 1 to 4 point scale |

NEW ELA PSSA QUESTION TYPE: EVIDENCED-BASED SELECTED- RESPONSE (EBSR)

- A two-part multiple-choice question
 - Part one measures comprehension and analysis of text
 - Part two measures textual evidence a reader used to support understanding
- May require more than one answer
- All answers are plausible and use academic vocabulary

5TH GRADE EBSR EXAMPLE

This question has two parts. Answer Part One and then answer Part Two.

Part One

Based on “Bald eagle deaths raising concerns,” what is the relationship between the existence of power lines and the rate of bald eagle deaths?

- A. The materials that are used to build power lines affect the rate of bald eagle deaths.
- B. The pesticides used near power lines affect the rate of bald eagle deaths.
- C. The distance power lines are from each other affects the rate of bald eagle deaths.
- D. The pollution created by power lines affects the rate of bald eagle deaths.

5TH GRADE EBSR EXAMPLE

This question has two parts. Answer Part One and then answer Part Two.

Part Two

What evidence from the passage supports your answer above? Choose **two** answers.

- A. "...electricity transmission wires are within the distance of an eagle's wingspan..."
- B. "'The danger comes from the potential to touch two lines,'..."
- C. "Power poles and lines are particularly attractive to birds..."
- D. "Crews found the dead bird while working to restore power in the area..."

NEW ELA PSSA QUESTION TYPE: TEXT DEPENDENT ANALYSIS (TDA)

- May only be answered with evidence from the text
- May start with a literal check for understanding, but must move to analysis, synthesis, and evaluation
- Focus on words, sentences or paragraphs as well as larger ideas, themes or events
- Focus on difficult portions of text in order to enhance reading proficiency

7TH GRADE TDA EXAMPLE

Old *Text Inspired* Prompt

- After reading the passage, identify the significance of the bottled ships. Use two pieces of evidence to support your response.

New *Text Dependent* Prompt

- Authors use figurative language in their stories. Write an essay analyzing the role that figurative language plays in revealing the significance of the bottled ships in the passage. Use evidence from the passage to support your analysis.

New Math PSSA

Each grade level has five reporting categories

➤ **A = Numbers and Operations**

- **A-T** = Base Ten (Gr 3-5)
- **A-F** = Fractions (Gr 3-5)
- **A-N** = Number System (Gr 6-8)
- **A-R** = Ratios and Proportional Relationships (Gr 6-7)

➤ **B = Algebraic Concepts**

- **B-O** = Operations and Algebraic Thinking (Gr 3-5)
- **B-E** = Expressions and Equations (Gr 6-8)
- **B-F** = Functions (Gr 8)

➤ **C = Geometry**

- **C-G** = Geometry (Gr 3-8)

➤ **D = Data Analysis and Probability**

- **D-M** = Measurement and Data (Gr 3-5)
- **D-S** = Statistics and Probability (Gr 6-8)

New Math PSSA

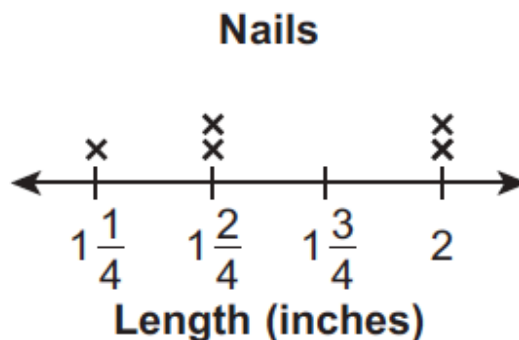
Item Specifics

- All items may cross Eligible Content, Descriptors, Anchors and Reporting Categories
- All items align to the Anchor
 - The breadth is wider
 - The depth is deeper
- Multiple choice items based on the Anchors aligned to the PA Standards
- The Eligible Content is considered Assessment Limits

3RD GRADE MATH EXAMPLE

Kim measured the lengths of nails she found.

She made the line plot shown below.



After making the line plot, she found two additional nails.



Use your ruler to measure the lengths of the two nails.

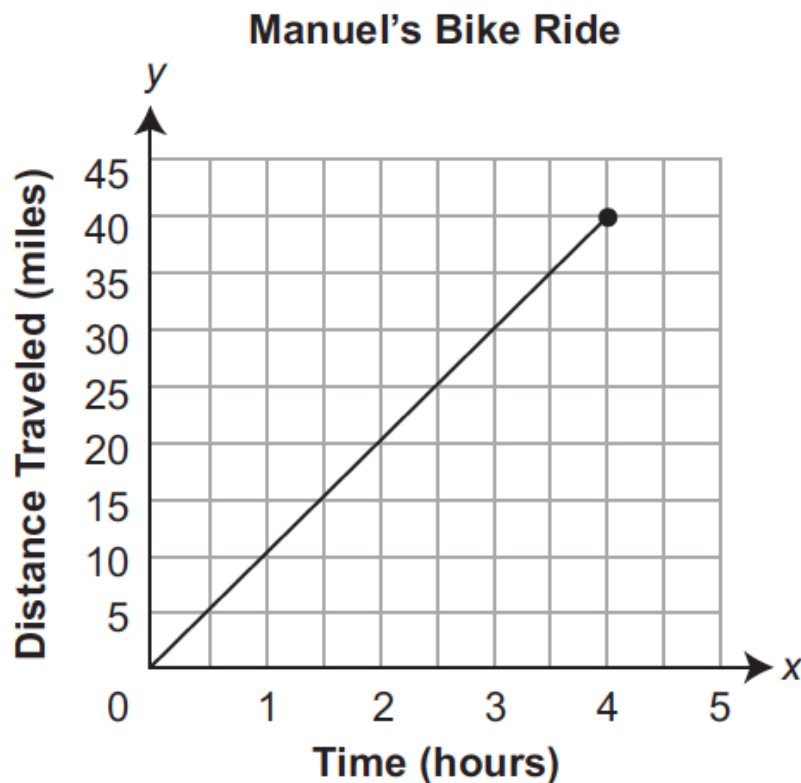
Which line plot now shows the lengths of all the nails Kim found?

7TH GRADE MATH EXAMPLE

Valery and Manuel ride their bikes 40 miles every Saturday. Valery rides at an average speed of 9.6 miles per hour (mph).

A. Exactly how many hours does it take Valery to ride her bike 40 miles? Show or explain all your work.

Manuel's bike ride is represented by the graph shown below.



Valery increases her speed by 4% the next time she rides her bike so she can ride faster than Manuel.

- B.** Explain why the 4% increase is **not** enough for Valery to ride faster than Manuel. As part of your explanation, find how many fewer miles Valery rides than Manuel does when he finishes his 40-mile bike ride.

PA CORE AND *ALL FORWARD*

- **Redefining success**

- Define growth more broadly
- Measure and report growth more comprehensively
- Balance assessment practices

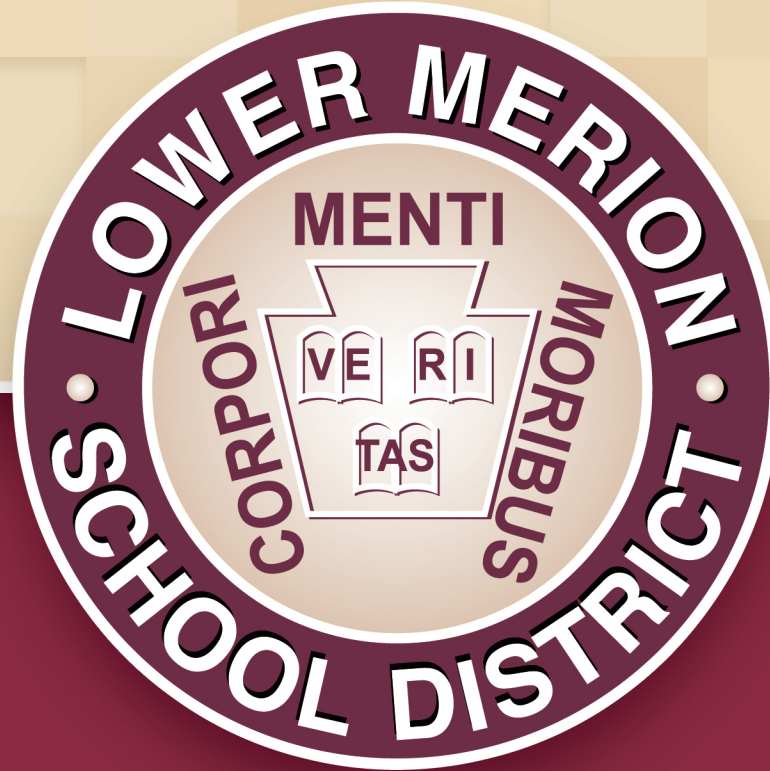
- **Transformative curriculum**

- Integrate content and skills more across subject areas

- **Professional Learning**

- Embed more opportunities during the school day for professionals to collaboratively plan, reflect and innovate

Changes in the Math Course of Studies



Inter School Council Meeting ♦ March 10, 2015

Arthur Mitchell, Secondary STEM Supervisor

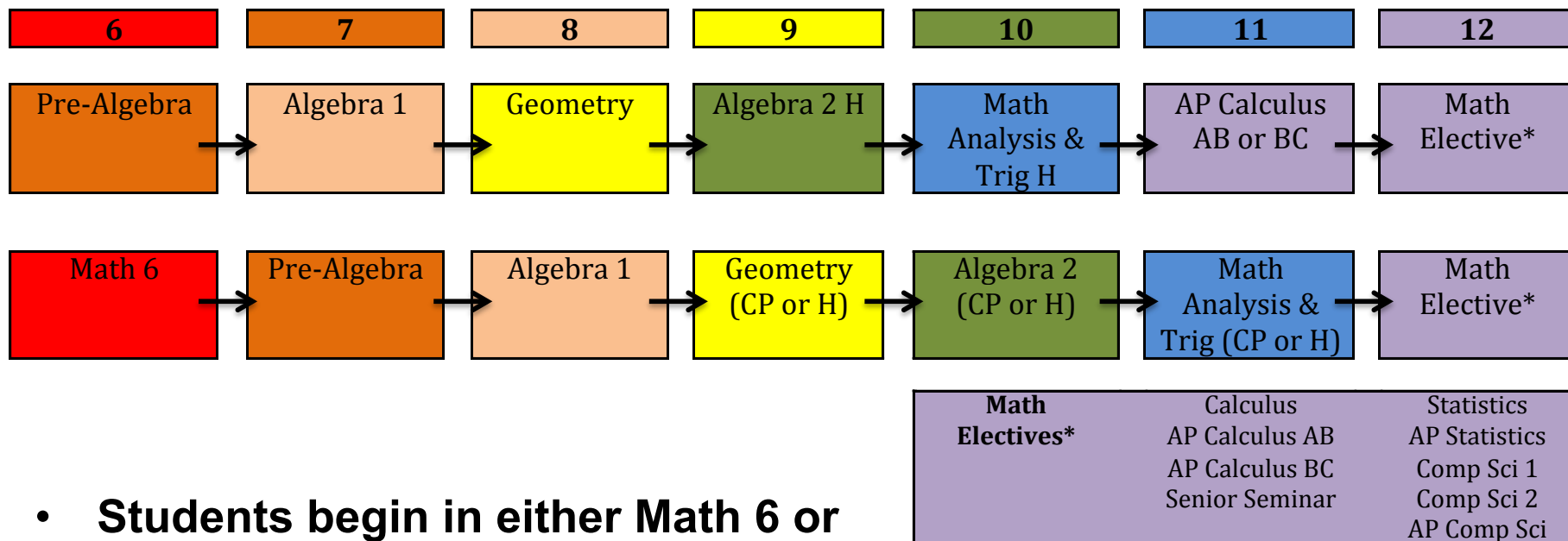
LOWER MERION SCHOOL DISTRICT

Why was there a need to make a change in the Math Program?



In December 2011, the LMSD Board of School Directors approved the recommendation to change the middle school math course sequence to make Algebra 1 a one-year course that would be completed by 8th grade.

LMSD Current Math Sequence 2012-15



- Students begin in either Math 6 or Pre-Algebra
- The Middle School courses have the same content regardless of the year they are taken
- All students complete Algebra 1 by the end of 8th grade
- The Keystone exam is given at the end of Algebra 1

Why was there a need to make a change in the Math Program?



Feedback from middle school teachers and student achievement data indicated that the current, 1-year Algebra course is not serving the needs of many students and that the district should explore other options for the course sequence.

Why was there a need to make a change in the Math Program?



Position Statements from the Math Community

1. Algebra should be a course taken when students demonstrate readiness (NCTM 2008)
2. Algebra is an important strand of mathematics for all students (NCTM 2014)

Why was there a need to make a change in the Math Program?



Parent Feedback

- ☐ There is concern that some students are being unnecessarily rushed through the math curriculum
- ☐ Some families have expressed that their students have not had sufficient time to fully grasp essential Algebra 1 concepts

Why was there a need to make a change in the Math Program?



The 2011 decision was made prior to the following:

- 1. The completion and adoption of the Core Standards**
- 2. Updates in Chapter 4 being finalized**
- 3. An operational Keystone Exam**

What was our process?



2013-14 School Year

- Met with groups of teachers who expressed concern about the current program

Summer 2014

- Gathered relevant student achievement data to support the need for change
- Revised the Middle School math Curriculum to reflect the PA Core

What was our process?



Fall 2014

- Convened several meetings where a proposal for refining the math sequence was developed
- Reviewed the proposal with administrative staff and made changes consistent with current research and the newly adopted district strategic plan

What are the approved changes?



- **A two-year Algebra 1 course be made available**
- **Incorporation of Bridge Programs to support acceleration**
- **The Keystone Exam be given during or after Algebra 2**

New Course: Advanced Topics in Linear Algebra & Discrete Mathematics



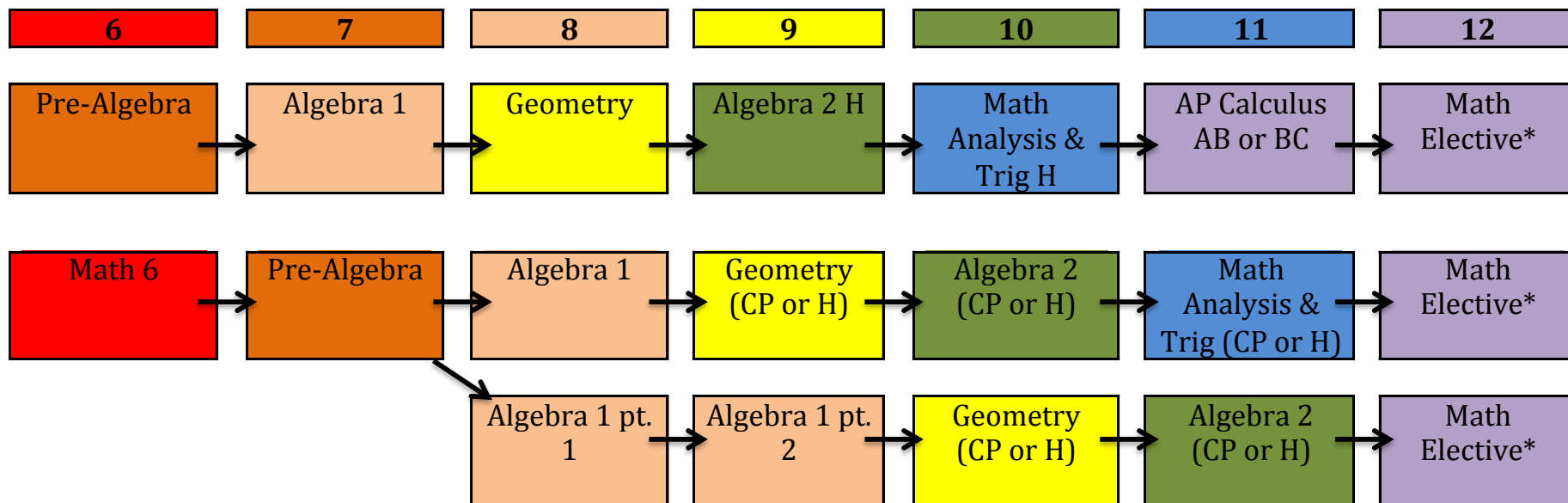
- **It is a rigorous senior-year math elective for students who complete calculus in their junior year**
- **It will allow students to investigate mathematical ideals, utilize authentic models and develop a research project with meaningful application**

New Course: Financial Math



- **It is designed to help students develop an understanding of the mathematics involved in the a wide-range of financial transactions**
- **It is project-based so that students develop higher-level mathematics literacy skills**
- **It uses authentic data and assessments in order to introduce “real world” concepts**

LMSD Approved Math Sequence beginning in 2015-16



| | | |
|------------------------|---|---|
| Math Electives* | Algebra III/Trig Math Analysis Calculus AP Calculus AB AP Calculus BC Senior Seminar Lin Alg/Discrete | Financial Math Statistics AP Statistics Vis Program Comp Sci 1 Comp Sci 2 AP Comp Sci |
|------------------------|---|---|

- **Students who are on grade-level will be placed into either a one-year or two-year Algebra program**
- **The Keystone exam will be given during Algebra 2**

What are the impacts of the proposed changes?



- 1. Students will be able to follow math pathways that are better suited to their academic performance and need**
- 2. There will be more time for teachers to provide Algebra instruction**
- 3. There will be less testing at the middle school level**



1-Year vs. 2-Year Algebra 1

- **The Algebra content will be the same but covered at a different pace**
- **The same instructional materials will be used**
- **The benchmark exams and common exams will cover the same topics**



1-Year vs. 2-Year Algebra 1

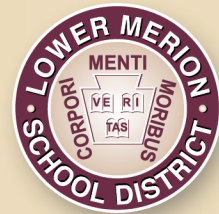
- **The Algebra 1 part 1 course (8th grade) will allow teachers to cover additional topics that align to the 8th Grade PA Core**
- **The difference in pace will create more time for collaboration, scaffolded instruction, projects, and re-teaching**

Criteria for 1-year Algebra 1 in 8th Grade (2015 school year)



- **Grades based on assessment scores**
- **End of year Algebra readiness exam**
- **Teacher recommendation (rubric that evaluates math practices)**

Criteria for 1-year Algebra 1 in 8th Grade (2015 school year)



Grades based on assessment scores

- Because of the collaborative nature of assessment development in the buildings, Test and Quiz grades provide the best basis for classroom evaluation

Criteria for 1-year Algebra 1 in 8th Grade



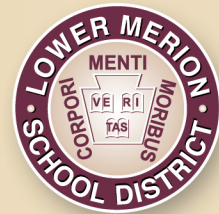
End of year Algebra readiness exam*

An exam that does the following:

- Aligns results to the PA Core
- Has a range of item difficulty
- Produces a referenced score

***Students who receive testing accommodations through a 504 agreement or IEP will receive these accommodations on this readiness exam**

Criteria for 1-year Algebra 1 in 8th Grade

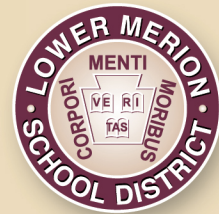


Teacher recommendation

A simple rubric that looks at Math Practices

| | |
|--|---|
| Makes sense of problems and perseveres in solving them | Uses appropriate tools strategically |
| Reasoning abstractly and quantitatively | Attends to precision |
| Constructs viable arguments and critiques the reasoning of others | Looks for and makes use of structure |
| Model with Mathematics | Looks for and expresses regularity in repeated reasoning |

Criteria for 1-year Algebra 1 in 8th Grade

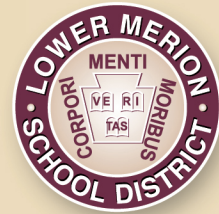


Standards of student practice in mathematics proficiency matrix

Hull, Balka, and Miles (2011)

| | Student can: | Initial | Intermediate | Advanced |
|----|----------------------------|--|--|---|
| 3a | Construct viable arguments | Explain their thinking for the solution he/she found | Explain his/her own thinking and the thinking of others with accurate vocabulary | Justify and explain, with accurate language and vocabulary, why her/his solution is correct |

How can a student who is in 2-Year Algebra 1 still get to Calculus?



- **Participation in an Algebra Bridge program during 8th grade Algebra 1 part 1 and taking Algebra 1 part 2 in summer school**
- **Taking Geometry during the summer after 9th grade**
- **Taking Geometry concurrently with Algebra 2 in 10th grade**

What is a Bridge Program?



The Bridge Program will use Pre-Algebra or Algebra content as a vehicle to encourage students to:

- a. extend their thinking and persevere in problem solving
- b. reason abstractly and quantitatively
- c. communicate effectively in mathematics
- d. construct viable arguments and critique the reasoning of others, and
- e. make sense of structure and patterns in mathematics

What is a Bridge Program?



Pre-Algebra to 1-Year Algebra 1 Bridge

Designed to help students enter the 1-year Algebra 1 course in 8th grade

- **Students will participate during the 2nd semester of Pre-Algebra in 7th grade**
- **The Bridge Program will have a school year component and a summer component**

What is a Bridge Program?



Algebra 1 part 1 to Summer Algebra 1 part 2 Bridge

Designed to help students become eligible to take Algebra 1 part 2 in summer school

- **Students will participate during 2nd semester of Algebra 1 part 1 in 8th grade**
- **The Bridge Program will have a school year component**

Bold Statement 1: Redefining Success



The District recognizes and honors that students grow at different rates and that their ultimate outcomes should be evaluated based on a richness of appropriate, engaging, and challenging experiences and not merely grades and assessments.

Bold Statement 2: Transformative Curriculum

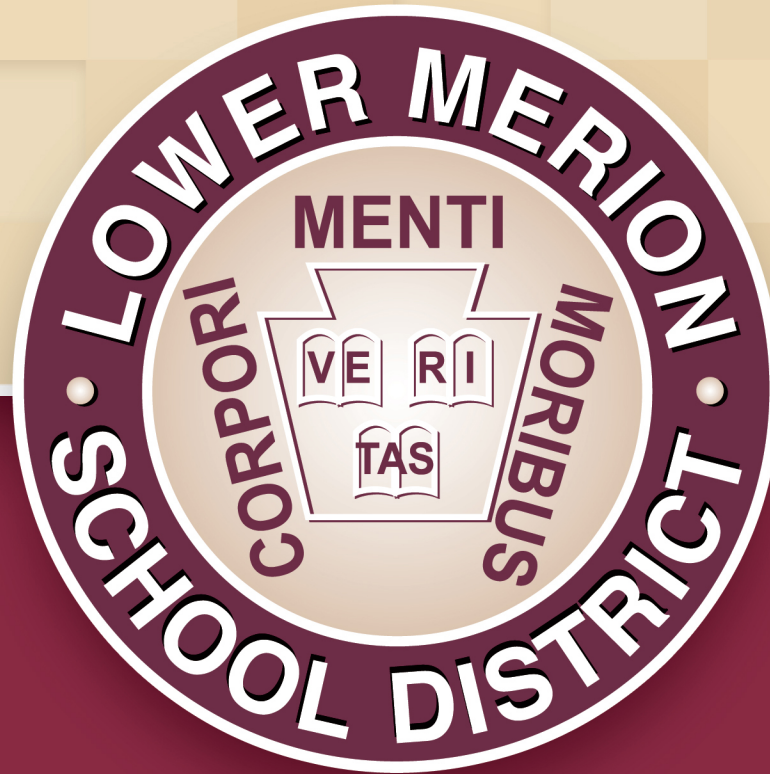


The District seeks ensure that there is a responsive curriculum which is adapted to learners and is vertically and horizontally aligned. There should be enough flexibility to allow learners to move into places that maximize their potential.

Bold Statement 3: A Commitment to Professional Learning



Teachers and their professional practice are at the core of the success of this proposal. The Professional Learning Community is the dynamic structure where the ideals presented here are operationalized.



LOWER MERION SCHOOL DISTRICT