

RSU #18

Messalonskee

Engaging Students
Strengthening Communities
Creating Global Leaders

Engaging Students, Strengthening Communities, Creating Global Leaders

Goals for Curriculum Orientation Meetings

- **Gain an understanding behind the process used to create our K-12 Standards-based Curriculum.**
- **Become more familiar with the format of the curriculum.**
- **Collect initial feedback from teachers.**
- **Understand how to access the draft curriculum documents.**

The Process

- 2010: Identified representatives from each school District in the RISC Cohort, in the content areas of ELA, Math, Science, Social Studies and Personal/Social Skills
- Each group has worked with Bea McGarvey (Marzano Associates) to unpack standards and identify measurement topics. (2010-2011)
 - “articulating measurement topics makes it easier to develop formative classroom assessments. It also clearly delineates what teachers are to address from one level to the next.” (Marzano)
- Common Core, MLRs and National Content Area Standards were used in this process

The Process



- Documents have undergone a review from representatives from Marzano Labs.
- The goal: Pilot this curriculum in school year 2011-12, collect feedback, make adjustments and implement across the RSU in 2012-13.
- 2011-12: Begin work in other curriculum areas

History of Standards in Education

Standards Documents Created

- **1983 A Nation at Risk Report called for an upgrade in our K-12 educational system.**
- 1989 National Council of Teachers of Mathematics
- 1989 Pres. George H.W. Bush: Governors Education Summit: set goals for U.S. students in the areas of English, Math, science, history & geography.
- 1990: National Education Goals Panel & 1991: National Council on Education Standards & Testing
 - Which standards, what performance levels and types of assessments.
- 1991 SCANS report: skills needed in the working world

History of Standards in Education

- 1997 Maine's Learning Results
 - Grade level curricula were aligned with Maine standards
- **Two problems surfaced across the country**
 1. **Standards represented too much content**
 - Requires approx. 71% more instructional time than available (Marzano, Kendall & Gaddy, 1999)
 - Requires a K-22 systems
 - Teachers either skip around or race through everything "coverage"
 2. **Individual standard statements include multiple dimensions or traits.**

Sample Math Standard

- Develop fluency in adding, subtracting, multiplying and dividing whole numbers.
 - 4 dimensions? 2 dimensions?? 1 dimension???
- The NCTM document includes 241 benchmarks, after unpacking there are more than 741 unique elements (Marzano, 2002)
- Thus, it is important for us to unpack standards documents and break them down into measurable topics: “measurement topics”
- WE must provide teachers with a **“GUARANTEED & VIABLE CURRICULUM”**

“Guaranteed & Viable Curriculum”

Guarantees equal opportunity for learning for all students & that the curriculum being assessed is the one being taught.

- Our Curriculum articulates what EVERY RSU 18 student needs to know and be able to do.
- Identify essential content & skills by unpacking standards into measurement topics
- Using Formative Assessment to report on these learning targets

Viable means there is enough time to teach the essential knowledge and skills

- Limit measurement topics to 20 or fewer per subject at any one time.

Clarifying the Term “Levels”

- Each Measurement Topic is broken down into a number of levels.
- The levels do not represent grade levels.
- The levels represent the sequence or order through which the learner should progress through the Measurement Topic.
- The levels do not equate to grade levels. Rather, the levels represent a scope or range of complexity for that Measurement Topic.
- When the learner accesses or begins work at Level 1 of the MT, how they learn it, and how they demonstrate it is unique to each learner.

Students learn in different ways and timeframes

RSU No. 18 Messalonskee Customized Learning Model

Group & Regroup Learners

Curriculum

Un-Packing Standards into learning goals and put in scoring scale format

Build Units Of Study/lessons Using learning goals

Reporting

Specific Feedback, Learning over time not averaging scores within measurement topics, Educate Software will help, Traditional Report Cards will still be used.



Instruction

Develop a culture of student engagement, RISC Tools, Voice & Choice, Literacy Strategies

Feedback, Feedback, Feedback

Assessment

Formative & Summative, Assessment tasks tied to each learning goal provide flexibility & customization

Use Assessment Tasks to Measure



Review Sample Documents



**Scope of Measurement Topics within
a Content Area, Scope of a Single
Measurement Topic, Scales of a
Single Measurement Topic**

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How to Access the Draft Curriculum Documents

- Once the documents return from their second review from Marzano Labs I will post them on a DropBox Folder. (Hopefully by the end of June)
- I will share that folder with anyone who indicates they are interested.
- Eventually these documents will be posted on our website.
- Once you are given the permissions in the DropBox Folder you will receive an email on how to access the folder.

Turn and Talk

**Turn to a neighbor and
discuss
what you saw.**

**List 2 questions you have and
2 things we can do to
support you if you decide to
pilot next year.**

Implementation Goals for 2011-12 (PK-8)

- **Goal #1: Build a culture of increased student voice, choice, & ownership in every classroom.**
- **Goal #2: Pilot some Vertical Teams (K-8)**
- **Goal #3: Pilot, Refine & Adopt our Standards-based Curricula K-12**
- **Goal #4: Create Standards-based Curricula in other content areas.**
- **Goal #5: Continue to provide training for all staff & support the pilot projects. (Implement “E-ducate”)**
- **Goal #6: Develop a Communication Plan**

Summer Preparation

so far....

- New Curricula Orientation Meetings: June 6, 9, 15, 16, 20, 21, 22, & 23
- June 27 & 28: Formative Assessment & Reporting Training
- July 27 & 28: High School Training
- August 17 & 18: Curriculum Work, Unit Development, Lesson Plans for those piloting the new curriculum.
- August 22-25: CDD Beacon & IDD Adv. Beacon Training
- August 1-4 Educate Software Training (Details TBA)
- Pilot Organizational Work: submit proposals

What will you need???

Thank you



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History of Standards in Education

- 2009-2010 Common Core State Standards released
 - English Language Arts, Mathematics, & Literacy in History/Social Studies, Science & Technical Subjects
 - State-led effort by National Governors Assoc. & Council of Chief State School Officers
 - Standards developed in collaboration with teachers, administrators and experts from national organizations.
- 2009-2011 School Systems across the State of Maine are becoming familiar with the Common Core
- The Process for RSU #18 Messalonskee???

Tool Kit

Parking Lot, Code of Cooperation, 5 Whys,
Clock Activity, Think-Pair-Share, etc.

Build a climate of collaboration within
a group, classroom, organization, etc.
Increase engagement amongst
students and teachers.

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
<p>4 In addition to the 3.0 knowledge, infers or applies BEYOND WHAT WAS TAUGHT</p>					Justify through algebraic proof the process for solving multi-step linear equations (A-REI.1)
<p>3 No major errors or gaps in the TARGETED, COMPLEX KNOWLEDGE</p>	<p><i>Is skilled at</i> converting between written and numerical expressions</p> <p>Understand how to evaluate a numerical expression (including exponents) given specific values for the unknown (6EE)</p>	<p><i>Is skilled at</i> solving an equation or inequality as a process of substitution that makes the statement true</p> <p><i>Is skilled at</i> solving one step equations using positive, rational numbers (6EE)</p>	<p>Understand the relationship between independent and dependent variables as representative of real-life situations</p> <p>Understand how to connect the independent and dependent variables with an equation (6EE)</p> <p><i>Is skilled at</i> solving one step equations using rational numbers (positive, negative) (7EE)</p>	<p>Understand how to apply properties of operations (i.e. commutative, associative, etc.) to add, subtract, factor (numbers), expand (distributive property) linear expressions with rational coefficients</p> <p>Understand the process for solving multi-step equations using rational numbers in any form (positive, negative, whole, fractions, etc.)</p> <p><i>Is skilled at</i> constructing equations and inequalities from real world situations (7EE)</p>	<p>Understand the process for solving multi-step linear equations (using algebraic properties) with one solution, infinitely many solutions, or no solutions</p> <p>(8EE)</p>
<p>2 No major errors or gaps in the SIMPLER, FOUNDATIONAL KNOWLEDGE</p>	<p>Know terms: expression, substitution</p> <p>Knows the parts of an expression using mathematical terms, such as, variable base, coefficient, exponent, (6EE)</p>	<p>Knows that a variable represents an unknown value (concept)</p> <p>Know terms: set, solution, solution set, equation, inequality</p> <p>Knows the solution to an inequality results in an infinite set of answers as plotted on a number line (6EE)</p>	<p>Know terms: independent variable, dependent variable, relationship</p> <p>Knows the difference between the independent and dependent variables</p>	<p>Know terms: commutative property, associative property, distributive property, factor, expand, linear expression, coefficient, like terms</p> <p>Knows when the solution for a given problem is reasonable (do we move to a 4?) (7EE)</p>	<p>Know terms: solution, no solution, identity (infinitely many solutions), conditional solution</p> <p>Knows algebraic properties including identity for addition/multiplication, properties of equality, multiplicative property of zero, property of reciprocals, additive inverse, etc. (8EE)</p>

	LEVEL 6	LEVEL 7	LEVEL 8	LEVEL 9	LEVEL 10
<p>4</p> <p><i>In addition to the 3. 0 knowledge, infers or applies BEYOND WHAT WAS TAUGHT</i></p>			<p>Justify through algebraic proof the process for solving quadratic equations (A-REI.1)</p>		<p>Justify through algebraic proof the process for solving exponential equations (A-REI.1)</p>
<p>3</p> <p><i>No major errors or gaps in the TARGETED, COMPLEX KNOWLEDGE</i></p>	<p>Understand the process for solving systems of linear equations through substitution or cancellation (elimination) with one solution, no solution or infinitely many solutions</p> <p>Understand how to solve systems of equation word problems that model real-life situations (8EE)</p>	<p>Understand the process for performing operations on polynomials (add, subtract, multiply) (A-APR.1)</p>	<p>Understand the structure of quadratic expressions</p> <p>Understand that quadratic expressions can be written in equivalent forms to reveal and explain algebraic properties (through factoring and expansion)</p> <p>Understand how to construct a quadratic equation and use it to solve (through factoring, quadratic formula, complete the square, and technology) in real-life situations (A.SSE.3, A-CED.1, A-REI.4)</p>	<p>Understand how to produce equivalent expressions through simplification of rational expressions using algebraic manipulation, long division or technology (A-APR.6)</p> <p>Understand the process for identifying zeros of polynomials through multiple methods (including through algebraic manipulation and technology) (A-APR.3)</p>	<p>Understand that exponential expressions can be written in equivalent forms to reveal and explain algebraic properties</p> <p>Understand how to construct an exponential equation and use it to solve in real-life situations (A-SSE.2, A-CED.1)</p>
<p>2</p> <p><i>No major errors or gaps in the SIMPLER, FOUNDATIONAL KNOWLEDGE</i></p>	<p>Know terms: substitution, cancellation, intersection, no solution (parallel), identity (same line) (8EE)</p>	<p>Know terms: polynomial (types), names by degree (quadratic, cubic, etc.)</p>	<p>Know formulas/process: quadratic formula, difference of squares, perfect square trinomial, completing the square, greatest common factor, zeros, roots</p>	<p>Know terms: rational expression</p> <p>Know formulas/process: sum/difference of cubes, rational zeros, long/synthetic division</p>	<p>Know term: exponential expression, rational exponent</p> <p>Knows the structure of exponential expressions with rational exponents (A-SSE.1)</p>

CONTENT AREA: Math		STANDARD/STRAND: Algebra	
LEVEL: 1 and Inequalities		MEASUREMENT TOPIC: Expressions, Equations, and Inequalities	
4.0	<i>In addition to the 3.0 knowledge, infers or applies beyond what was taught</i>	<i>Taxonomy Level</i>	4.0 ASSESSMENT ITEMS: <i>As a result of understanding or being skilled at the knowledge identified in 4.0, the learner is able to:</i>
3.0	<i>No major errors or gaps in the following TARGETED, COMPLEX ideas and processes</i> Is skilled at converting between written and numerical expressions Understand how to evaluate a numerical expression (including exponents) given specific values for the unknown	<i>Taxonomy Level</i> <i>RETRIEVAL (Executing)</i>	3.0 ASSESSMENT ITEMS: <i>As a result of understanding or being skilled at the knowledge identified in 3.0, the learner is able to:</i> Translates a written expression into a numerical expression (ie: x is three less than y means $x=y-3$) Write, read and evaluate numerical expressions in which letters stand for numbers
2.0	<i>No major errors or gaps in the following FOUNDATIONAL, SIMPLE details and processes</i> Know terms: expression, substitution Knows the parts of an expression using mathematical terms, such as, variable base, coefficient, exponent,	<i>Taxonomy Level</i> <i>RETRIEVAL (Recalling, Recognizing)</i>	2.0 ASSESSMENT ITEMS: <i>As a result of understanding or being skilled at the knowledge identified in 2.0, the learner is able to:</i> Identify parts of an expression using mathematical terms.
1.0	<i>With help.....has the 2.0 content</i>		N/A

CONTENT AREA: Math		STANDARD/STRAND: Algebra	
LEVEL: 2 and Inequalities		MEASUREMENT TOPIC: Expressions, Equations, and Inequalities	
4.0	<i>In addition to the 3.0 knowledge, infers or applies beyond what was taught</i>	<i>Taxonomy Level</i>	4.0 ASSESSMENT ITEMS: <i>As a result of understanding or being skilled at the knowledge identified in 4.0, the learner is able to:</i>
3.0	<p><i>No major errors or gaps in the following TARGETED, COMPLEX ideas and processes</i></p> <p>Is skilled at solving an equation or inequality as a process of substitution that makes the statement true</p> <p>Is skilled at solving one step equations using positive, rational numbers</p>	<p><i>Taxonomy Level</i></p> <p><i>RETRIEVAL (Executing)</i></p>	<p>3.0 ASSESSMENT ITEMS: <i>As a result of understanding or being skilled at the knowledge identified in 3.0, the learner is able to:</i></p> <p>Use substitution to determine whether a given number in a specified set makes an equation or an inequality true.</p> <p>Solve real world and mathematical problems by writing and solving equations in the form $x + p = q$ and $px = q$ where p, x, and q are positive rational numbers</p>
2.0	<p><i>No major errors or gaps in the following FOUNDATIONAL, SIMPLE details and processes</i></p> <p>Knows that a variable represents an unknown value (concept)</p> <p>Know terms: set, solution, solution set, equation, inequality</p> <p>Knows the solution to an inequality results in an infinite set of answers as plotted on a number line</p>	<p><i>Taxonomy Level</i></p> <p><i>RETRIEVAL (Recalling, Recognizing)</i></p>	<p>2.0 ASSESSMENT ITEMS: <i>As a result of understanding or being skilled at the knowledge identified in 2.0, the learner is able to:</i></p> <p>Calibri font 10</p>
1.0	<i>With help.....has the 2.0 content</i>		N/A

Customized Learning ***“The RSU 18 Model”***



- Subway
- iTunes
- Amazon.com
- Verizon or AT&T
- Google

“Mass Production is to the Industrial Age as Mass Customization is to the Information Age”***

******“Inevitable: Mass Customized Learning, Learning in the Age of Empowerment”
by Charles Schwahn & Beatrice McGarvey***

Possible Pilot Arrangements

- Whole school in one subject
- Grade Span groups in 1 or more subjects

What will you need???

Pilots

Criteria

- At least two grades of students in Vertical format
- Involve teachers across the two or more grades who are at different levels of experience
- Start in Sept. or anytime prior to Jan. or in Jan.
- Willing to problem solve: figure it out...

Score at 2

Researched-based: your using “high probability” strategies & building culture

Score at 3

Evidenced-based: monitoring, measuring, adjusting, grouping & regrouping based on **individual** student needs.

Key Messages

- **We are building our own model for customized learning led by our RSU 18 mission & vision.**
- **We are studying the RISC model to inform our work.**
- **This is a five year journey for us.**
- **This is different change, more systemic, not a single intervention. It is second order change.**
- **We need to do this together (Students, Teachers, Ed. Techs, Adm., Parents and Community Members)**

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History of Standards in Education

Standards Documents

- 1992
 - USDOE: National History Standards Project
 - Physical Education Standards
 - Visual Performing Arts Standards
 - Civics & Government Standards
 - Geography Standards
 - National Health Standards
 - English Language Arts Standards
- 1993
 - Foreign Language Standards
 - Benchmarks for Science Literacy

History of Standards in Education

- 1994
 - Curriculum Standards for the Social Studies
 - U.S. History Standards released
 - National Geography Standards published
 - Standards for Civics & Government published
- 1995
 - National Health Education Standards published
 - National Physical Education Standards published
 - Performance Standards for English Language Arts, Science, Mathematics & Applied Learning released
 - National Standards for Business Education released

History of Standards in Education

- 1996
 - Foreign Language Standards released
 - National Science Education Standards
 - National Education Summit: 40 state governors & 45 business leaders call for state and local academic standards in core subject areas
 - Standards for the English Language Arts released
 - New draft of History Standards released
 - Technology Standards
- 1997
 - President Clinton declares need for every state to adopt national standards and implement statewide testing for 4th grade in reading and 8th grade in math by 1999