

Augusta Public Schools

40 Pierce Drive Suite #3, Augusta, ME 04330

(207)626-2468 ~ (207) 626-2444 Fax

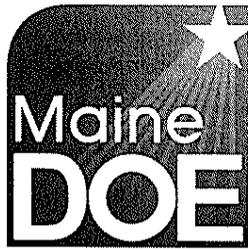
www.augustaschools.org

FAX

To: Diana Doiron From: Donna Madore
 Fax: 1-877-227-9838 Pages: 34
 Phone: _____ Date: 10/17/14
 Re: _____ CC: _____

- Urgent For Review Please Comment Please Reply Please Recycle

Comments: _____



School Administrative Units (SAUs) award diplomas. The Maine Department of Education's role is to ensure that SAUs base the awarding of a diploma on student proficiency for students graduating after January 1, 2018. The following Proficiency-Based Diploma Extension application is intended to provide the Department and the school administrative unit with evidence of a good fit between the district's current progress and their extension request.

Directions for submitting an extension application

1. Complete the document and provide evidence to support the responses. Our intent is to keep the process streamlined and reasonable and have therefore set word limits of 1000 words for each section in the application and request that districts submit a total of no more than 25 pages of evidence.
2. Convert the extension application document and all pages of evidence to a PDF format and fax your complete application to Diana Doiron at the following fax number: 1-877-227-9838.

Note: Extension applications that are incomplete or lack sufficient evidence will receive feedback requesting additional information. Our plan is to process all submissions within a month of the submittal window. This plan is dependent on the number of submissions received per submittal deadline.

Proficiency-Based Diploma Extension Option 3

At the time of the extension application the SAU will:

- Provide evidence of the proficiency based system in place at the middle school or K-8 level as evidence of the SAU’s preparedness to expand the proficiency-based system into the secondary level and its preparedness to award diplomas based on proficiency in the standards of the eight content areas and standards of the Guiding Principles after July 1, 2020.
- Provide a description of the overall plan to meet the goal of awarding of diplomas based on proficiency in the standards of the eight content areas and the standards of the Guiding Principles. The description should include benchmarks for the 2014-2015 school year and each year for which the extension is requested.
- Include a budget for the use of all existing targeted proficiency-based diploma transition funds during 2014-2015 and any 2013-2014 funds that were carried over to support the implementation of proficiency-based diplomas

LIMIT RESPONSES TO QUESTIONS TO 1000 WORDS PER QUESTION AND LIMIT TOTAL ATTACHED EVIDENCE TO 25 PAGES

Submittal Window

1. Indicate the submitting date.

August 18, 2014, 5 pm September 17, 2014, 5 pm October 18, 2014, 5 pm

Superintendents Region

2. Indicate the superintendent region in which your SAU is a member.

Aroostook	
Cumberland	
Hancock	
Kennebec Valley	X
Midcoast	
Penquis	
Washington	
Western Maine	
York	

3. **School Administrative Unit:** Augusta School Department
4. **High School(s):** Cony High School
5. **Name and title of person completing the extension request:**
Donna Madore, Assistant Superintendent
Kim Silsby, Principal, Cony High School
6. **Superintendent's name, address, phone number and email:**
James Anastasio, 40 Pierce Drive Suite 3, Augusta, Maine 626-2468
janastasio@augustaschools.org

Evidence of Preparedness

7. Describe the proficiency-based system in place at the middle school or K-8 level as evidence of the SAUs preparedness to expand the proficiency-based system into the secondary level and its preparedness to award diplomas based on proficiency in the standards of the eight content areas and the standards of the Guiding Principles after July 1, 2020. Limit your description to 1000 words (approximately 2 pages single spaced or four pages double spaced) and attach evidence to support your description referencing the name of the document(s) and specific page(s) .

Criteria:

- Clear description of the proficiency-based education work completed to date
- Clear connection between evidence and the work done
- Clear description of the impact the proficiency-based work is having on students, staff and community
- Clear alignment to extension option

During the school year 2006-2007 the ASD instituted a standards-based reporting system at the elementary schools which continues to be utilized at this time (Evidence A, pages 1-3). The report card committees have met intermittently and updated standards expectations; however more guidance was needed for our staff and we hadn't been able to move this reporting system into the middle and high school. The community has accepted the standards-based reporting system for this group.

Approximately 5 years ago, the Augusta School Department initiated a systemic alignment of the k-12 curriculum based on the MLR and the Common Core State Standards in 2011. This alignment has provided the district staff an outline of standards in each of the content areas that are taught. Continuous review and edit of our curriculum is completed as we entered into a licensing contract with ATLAS to manage the curriculum mapping initiative. The alignment has minimized instructional gaps and ensured student access to identified standards. (Evidence B, pages 1-5)

The elementary school staff continues to receive professional development specific to curriculum alignment with the common core. This took place during grade level meetings, early release and work shop days. In the fall, 2013, they moved to professional development on developing learning goals, using "I Can" statements (Evidence C).

Under the direction of the Director of Special Education, the k-12 special education teachers have received on going training on the common core, Standards-Based IEP development and alignment with the curriculum. They have attended DOE sponsored workshops, used DOE model forms and aligned their IEPs with the standards. (Evidence D) During the school year 2012-2013, the Director of Special Education participated in DOE led training session around CCSS and the development of IEPs. By the spring of 2013, all special education staff in the ASD was introduced to the CCSS, development of IEP and how to support proficiency for the students they service. Through continued participating in workshops, webinars and in-district training, the special education staff learned about standards based instruction and field tested IEP goals during 2013-2014.

In the summer of 2013, the ASD administrators were involved with training provided by DOE consultant Gary Chapin. A district implementation plan was designed to expand the proficiency based system at the middle school and high school (Evidence E).

A leadership team with representatives from each of the academic disciplines, support areas and the middle school was organized at the high school during the school year 2013-2014. They created an action plan (Evidence F, pages 1-2) and met regularly with staff. Early release time was provided, workshop days were utilized and summer time work took place.

The middle school and high school staff were able to complete the following work:

- 5-8 graduation standards were identified for each content area*
- 8-10 performance indicators for each graduation standard was identified (Evidence G, pages 1-4)*
- A matrix was developed documenting each graduation standards, performance indicators with learning targets for each course (Evidence H)*
- They identified gaps in standards not addressed in current course and developed 2 additional courses which were approved by the school board.*
- They have achieved consensus on proficiency standards by departments*
- They have prioritized the courses applicable to the Class of 2018*
- They are creating common performance assessments for key Performance indicators*

The ASD administrative team understands the need for a 7-12 Standards-Based grading system and explored how standards based grading and reporting would work at this level. Our current reporting system (Web2School) could be adapted as discussed in a training session with

representatives last year. Now that the leadership team has identified graduations standards and performance indicator with learning targets, work on the reporting system can take place.

The school board has continued to be informed every step of the way and experienced a culmination presentation this summer. (Evidence I, pages 1-4). They have shown their support by approving 2 additional courses at the high school level in Math and Science in the winter of 2013.

In July, 2014, the ASD administrative team spent a day reviewing the prior work completed and developed a continuum moving forward. As a team we came to a consensus of our process. The secondary group would continue work on developing common assessments, work on grade books in our reporting system, address gaps in standards and develop a proficiency based matrix. The elementary group would form a leadership team, ensure all content areas were "mapped", look for alignment with the standards, identify gaps, revisit common assessments and refine student support systems.

In addition to the work the ASD has been completing since 2006, moving forward, the administrators and leadership committees agreed on timelines for tightening up the system at the elementary level and continuing the evolution of a proficiency-based system into the middle school and high school.

Overall Implementation Plan

- 8. Provide a description of the overall plan to meet the goal of awarding diplomas based on proficiency in the standards of the eight content areas and the standards of the Guiding Principles after July 1, 2020. The description should include benchmarks and metrics for the 2014-2015 school year and benchmarks for each year for which the extension is requested. Limit your description to 1000 words (approximately 2 pages single spaced or four pages double spaced) and attach evidence to support your description referencing the name of the document(s) and specific page(s).**

Criteria:

- Overall plan is aligned with the SAU shared vision focus areas
- Benchmarks for progress in 2014-2015 include activities/actions that will support the achievement of the benchmarks and metrics to measure them.
- Evidence included clearly supports the benchmarks

The ASD believes that in order for a school department to be successful, we need to have an aligned curriculum, effective instruction and collective responsibility. Our vision includes the statement, "our school system is one in which learning and teaching are personalized to be meaningful and to promote achievement." Practicing proficiency based instruction encompasses

the essential components of our beliefs and our vision. Everyone is responsible for student success, across all disciplines and content areas, we need highly effective teachers who can differentiate and personalize instruction to meet the needs of all our students. A reasonable six year implementation plan was created. However, the ASD is committed to our students and what is best for them and aspire to accomplish our work sooner. Proficiency based education aligns with our vision and goals that all students will receive supports necessary for success in their educational experiences in the ASD.

Implementation Plan, School Year 2014-2015

- *Common assessments in all Freshmen required courses will be field tested by June, 2015*
- *HS Professionals will evaluate assessments and inter rater outcomes by June, 2015*
- *Level of "proficiency" is defined by October 30, 2014*
- *HS Rubric is developed for assessing guiding principles by April, 2015*
- *HS Guiding Principles are aligned within the curriculum by May, 2015*
- *Reporting system is established for guiding principles by June, 2015*
- *Update staff in grades k-6 of proficiency based curriculum work and develop plan by October, 2014*
- *Curriculum maps at the k-5 level are aligned with CCSS in ELA and Math*
- *District Reporting System (Web2 School) enhancement will be drafted by June, 2015*
- *Implement Freshmen Seminar to ensure proficiency in ELA*
- *Pilot 8th grade ELA Seminar*
- *Pilot 8th grade World Language course*
- *Initiate conversations with School Board specific to world language requirements*
- *6, 7 & 8th grade teachers through vertical teaming complete the identification of standards and develop an outline profiling what courses standards are taught by June, 2015*
- *6, 7 & 8th grade teachers through vertical teaming develop common assessments in all courses by June, 2015*
- *Graduation standards for Career Development, Social Studies and Music will be identified by January, 2015.*
- *Public Forum will be conducted by April 29, 2015*
- *School Board presentation by June, 2015.*

Implementation Plan, School Year 2015-2016

- *Develop common assessments for Sophomore required courses by August, 2015*
- *Field test common assessments in all Sophomore courses by June, 2016*
- *Train staff to utilize guiding principles rubric and reporting system by October, 2015*
- *Evaluate options to meet World Languages standards and make recommendation by November, 2015*
- *Field test 6th, 7th & 8th grade common assessments throughout the school year*
- *Professionals will evaluate new assessments and inter rater outcomes by June, 2016*

- *Establish a committee to update k-5 report cards, investigate options for grades 6- 8 standards based report cards by February, 2016.*
- *Get board approval for updated report cards k-8 by June, 2016*
- *Committee to investigate and develop a systemic recovery system for students in grades k-12 by February, 2016*
- *Public Forum by April, 2016*
- *School Board Presentation by June, 2016*

Implementation Plan, School Year 2016-2017

- *Develop common assessments for Junior required courses by August, 2016*
- *Field test common assessments in all Junior courses by June, 2017*
- *Professionals will evaluate assessment and inter rater outcomes by June, 2017*
- *Establish the World Language curriculum to ensure all students can achieve standard proficiency by December, 2016*
- *Implement a systemic recovery program effective September, 2016*
- *Implement new standards based reporting system, k-12 quarterly and at trimester periods for students in grades k-12*
- *Obtain School Board approval*

Implementation Plan, School Year 2017-2018

- *Update School Board Policies specific to graduation by November, 2017*
- *Develop common assessments for Senior required courses by August, 2017*
- *Field test common assessments in all Senior courses by June, 2018*
- *Professionals will evaluate assessment and inter rater outcomes by June, 2018*
- *Committee will review data and outcome of recovery program by December, 2017*

Implementation Plan, School Year 2018-2019

- *District professional development will focus on aligning curriculum with standards updates 3 times during the school year*
- *Adjustments will be made to courses, assessments and reporting systems by June, 2019*

Implementation Plan, School Year 2019-2020

- *District professional development will focus on aligning curriculum with standards updates 3 times during the school year*
- *Adjustments will be made to courses, assessments and reporting systems by June, 2020*

Implementation Plan, School 2020-2021

- *Award Standards based diplomas to graduation class, June, 2021*

System of Supports for Student Learning

9. Describe the system of supports you have in place for middle school students when proficiency is not demonstrated. Describe your plan for growing the system of supports into the high school. Limit your description to 1000 words (approximately 2 pages single spaced or 4 pages double spaced) and attach evidence to support the description referencing the name of the document(s) and specific page(s).

Criteria:

- Clear description of the practices/protocols for improving student performance and ensuring feedback is timely, specific to each student and delivered when and where it has the most benefit
- Clear description of practices for regular monitoring of student progress
- Clear description of equity of opportunity for support in any content area and Guiding Principle

The ASD has numerous systems in place to support student achievement and proficiency in each of their classes. The middle school runs 5 content periods and a scheduled 30 minute RTI period daily. This is our Tier 1 Intervention within our RTI system. It is designed to benefit all our students.

Elementary teachers administer the Fountas & Pinnell Reading assessment three times per year to students in grades k-6. The results have been used to inform instruction and provide remediation for the students. On September 19, 2014, the middle school ELA and special education teachers were trained on administering the F & P and will now have the same data to inform their instruction with our at risk students. They will now be able to complete progress monitoring more efficiently. Teachers utilize IXL and Moby Max web software to identify remedial math and literacy needs of our students.

The ASD feels strongly that professional development for our teachers is imperative to ensure effective instruction. Through our Title II funds, a math mentor and literacy mentor support and train not only our elementary teachers, but consult with our middle school staff. The middle school teachers had access to a Literacy Coach last year through grant funding. This valuable resource was continued in our local funds. The middle school is piloting an 8th grade seminar which provides 30 students an additional 60 minutes per day of instruction in ELA. These students were identified for the seminar based on three data points, writing prompts, NECAP and grades.

Since our middle school students are housed at our high school, we have experienced little differences in providing support programs for the secondary students. Our high school schedule

provides a daily 30 minute RAM time which is the RTI period. RAM time takes place from 8:45 – 9:10 every day. On Fridays, students report to their homeroom for Advisor/Advisee time. Management of RAM time allows that On Mondays, students report to their Period 1 class, on Tuesdays, they report to their Period 2 class, on Wednesdays to their Period 3 class and on Thursday, they report to their Period 4 class.

The high school also has Advisor/Advisee time during homeroom. The purpose of this is to provide a school mentor/advisor for every student in grades 9-12. In addition the Advisor/Advisee time is designed to support the academic, behavioral, and social needs of students at the high school.

We understand there is not one intervention that covers all the needs of our students. The following strategies have been implemented to support our students' achievement.

Instructional Practices

- Data analysis with Staff, we work with staff to analyze data from the NECAP, ReadStep, PSAT, and SAT to inform instruction*
- "All Hands on Deck"- Every academic subject area staff member helps with the achievement of our students*
- Celebrate successes, we regularly celebrate success through morning announcements and assemblies every quarter*
- We have been working with our staff to adopt a philosophy that failure is not acceptable from our students and have completed a book study on **Failure is Not an Option** by Alan M. Blankstien. Staff has learned effective strategies for differentiation and remediation.*
- RTI notes in Web2School, we have worked with the staff to document strategies and interventions implemented with students into our school reporting system so each teacher has access to what has been tried and what works.*
- Staff completed other book studies on **Teach Like a Champion**, **Mindset**, and **Teach Like a Pirate**. The book studies will help encourage best instructional practices with students. It supports the creation a climate and culture of continuous improvement for our staff.*

Support Structures

- 8th grade ELA seminar provides an additional 60 minutes of instruction in reading and writing. This is for 8th grade students who scored a 1 or 2 on the NECAP, scored low on the district writing prompts and failed their English class.*
- Freshmen/Sophomore Seminar, a guided study model for all students who failed 3 or more of the content classes in 8thgrade or in their freshmen year. We place the students in a Freshmen/Sophomore academy. This support structure is a Tier 3 intervention for students who are at-risk for dropping out of school. The academy has classes with fewer students and a guided study at the end of the day.*

- *Reintegration specialist (RISP) position, our district employs a staff person who works with students who are truant or have been suspended. This position helps our most at risk students with conflict resolution, engagement, and motivation. The RISP is the bridge between home and school, making home visit and contact with parents. This person knocks on doors and gets kids in school.*
- *Strong connection with Adult Education and our CTE program. In addition to our connection with the adult education program, our attached CTE program allows us to explore ways to create multiple pathways to support students.*
- *Drop out committee, the building based Drop Out Prevention Committee developed an At-Risk rubric, analyzes data, and focuses on ways to support students.*
- *Advisor/Advisee, our high school students participate in an advisor/advisee homeroom to ensure an adult advocate is available for every student in our building.*

Collaborations

The ASD has developed a number of collaborative support programs with community agencies in the Greater Augusta community. Listed are the community partnerships focused on helping students:

- *Spurwink Targeted Case Management within the school setting*
- *Kennebec Behavioral Health provides student access to therapists and substance abuse counselor within the school setting*
- *Family Planning-expanded services access for Reproductive Health through our school health center*
- *Boys and Girls Club, Alternative to suspension program for student - off site*
- *Jobs for Maine Graduates, funding provided by private company adds another layer of support for students*
- *School Resource Officer, grant funded through the Augusta Police Department, supports education around safety and making positive choices*
- *YMCA partnership, teach leadership skills to our middle school students*
- *Maine National Guard, present the curriculum on digital citizenship and anti-bullying for middle and high school*

Proficiency-Based Diploma Transition Funds

10. Identify the approximate percentage of the 2013-2014 proficiency-based transition funds and how these were applied to proficiency-based education expenditures in the following areas:

Transition Funds allocated - \$25,521

FY14 Expenditures 35% (\$8,996)

- **Policy:** 0%
- **Practice:** 35%, professional development and committee work
- **Community Engagement :** 0%
- **One-year Carry Over:** 65% (\$16,525)
-

11. Provide a description of the intended impact for your transition funds. Attach a budget for the 2014-2015 transition funds and any 2013-2014 transition funds that were carried over after June 30, 2014. For each expense, identify the amount and date by which it will be expended. Limit your description to 1000 words (approximately 2 pages single spaced or 4 pages double spaced). Attach a budget document and limit the budget document to 2 pages.

Criteria:

- Clear description of intended impact for your use of transition funds
- Budget aligns to intended impact

Revenue

<i>FY 14 Carry Over</i>	<i>\$16,525</i>
<u><i>FY15 Allocation</i></u>	<u><i>25,585</i></u>
	<i>\$42,110</i>

Expenditures

<i>SY 14-15 Leadership Team monthly meetings</i>	<i>\$10,000</i>	<i>by June, 2015</i>
<i>Common assessment development work</i>	<i>\$ 7,000</i>	<i>by August, 2014</i>
<i>Reporting system enhancement (Web2School)</i>	<i>\$10,000</i>	<i>by June, 2015</i>
<i>Communications with Parents</i>	<i>\$ 2,500</i>	<i>by April, 2015</i>
<i>Meeting supplies</i>	<i>\$ 1,000</i>	<i>by June, 2015</i>
<i>Professional Development</i>	<i>\$ 5,000</i>	<i>by June, 2015</i>
<u><i>Common assessment development</i></u>	<u><i>\$ 6,610</i></u>	<u><i>by August, 2015</i></u>
	<i>\$42,110</i>	

Option 3 Authorization Page

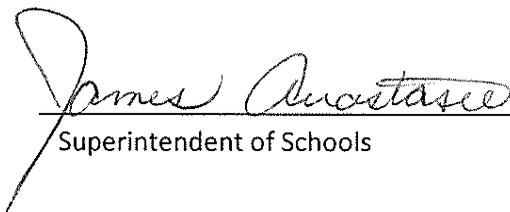
Annually the SAU will provide evidence of progress and will submit an extension renewal request to the Maine DOE by July 1. This request will include:

- evidence of progress toward the identified annual benchmarks;
- goals and benchmarks for continued progress over the next school year toward the awarding of diplomas based on proficiency of the standards of the eight content areas and the standards of the Guiding Principles; and
- a budget for use of additional proficiency-based diploma transition funds.

We certify that the information contained in the extension application accurately reflects the current status of our implementation of proficiency-based diplomas.

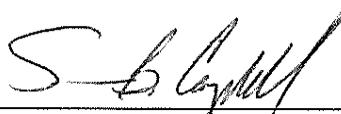
We certify that the criteria for awarding a diploma beginning after July 1, 2020 will be the following criteria from Maine Revised Statutes 20-A §4722-A:

- A. Demonstrate that the student engaged in educational experiences relating to English language arts, mathematics and science and technology in each year of the student’s secondary schooling;
- B. Demonstrate proficiency in meeting state standards in all content areas of the system of learning results established under section 6209;
- C. Demonstrate proficiency in each of the Guiding Principles set forth in department rules governing implementation of the system of learning results established pursuant to section 6209; and
- D. Meet any other requirements specified by the governing body of the school administrative unit attended by the student.



 Superintendent of Schools

10/17/14
Date



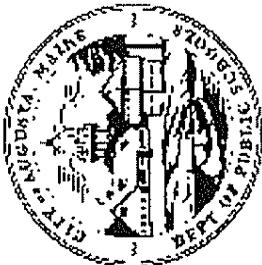
 Chair of School Board

10-17-14
Date

Evidence A
(pages 1-3)

Augusta School Department

Grade: Grade 6



Attendance	1 st Tr	2 nd Tr	3 rd Tr
Present	50.0		
Tardy	0.0		
Dismissed	1.0		
Absent	6.0		
Frequent absences/hardies adversely affect progress due to loss of instructional time	Yes/No	Yes/No	Yes/No

Academic Performance Standards

	Meets the Standard:	Partially Meets the Standard:	Needs More Time to Meet Standard:
E	<p>Exceeds the Standard:</p> <ul style="list-style-type: none"> Student demonstrates an in-depth understanding of skill and/or concepts above grade level Student performance is accurate without additional teacher support 	<p>Partially Meets the Standard:</p> <ul style="list-style-type: none"> Student demonstrates a basic understanding of skills and/or concepts at grade level Student performance varies in consistency and needs teacher support 	<p>Needs More Time to Meet Standard:</p> <ul style="list-style-type: none"> Student demonstrates minimal understanding of skills and/or concepts at grade level (or) is working on standards below grade level Student needs significant support to complete grade level work
	M	P	N
READING	Teacher: JAMIE MOORE		
Applies strategies to identify unknown words			
Determines the meaning of unknown words			
Uses selected strategies for comprehension			
Demonstrates understanding of grade level material: fiction, non-fiction, drama, poetry			
Demonstrates understanding of grade level material: informational and persuasive text			
Reads smoothly with expression			
WRITING	Teacher: JAMIE MOORE		
Uses a writing process to communicate their ideas with an emphasis on the development of a central idea for a variety of audiences and purposes			
Uses grade appropriate skills to produce different types of writing			
Uses sentence variety, proper grammar and effective words choice			
Applies the rules of punctuation, capitalization and spelling to communicate			
Spells priority grade level words correctly			
Uses legible handwriting			
MATHEMATICS	Teacher: JAMIE MOORE		
Ratios and Proportional Relationships			
The Number System			
Expressions and Equations			
Geometry			
Statistics and Probability			

A-1

A-2

	1st. Trl.	2nd. Trl.	3rd. Trl.
SOCIAL STUDIES			
Civics and government	Teacher: JANE MOORE		
Geography			
SCIENCE			
Universe and Solar System	Teacher: JANE MOORE		
Earth			
ART			
Understands and applies skills and concepts	Teacher: SARAH BARNHILL		
Demonstrates effective work habits and effort			
PHYSICAL EDUCATION			
Understands and demonstrates skills and concepts	Teacher: BRUCE RUMT		
Demonstrates sportsmanship and cooperation			
MUSIC			
Understands and applies skills and concepts	Teacher: RENEE STANLEY		
Demonstrates effective work habits and efforts			
ENVIRONMENTAL SCIENCE			
Understands and demonstrates skills and concepts	Teacher: C. FURMAN		
Demonstrates effective practice habits			
Demonstrates effort			
ACADEMIC SUCCESS HABITS			
Comes prepared to work	Teacher: JANE MOORE		
Follows directions			
Uses class time effectively			
Participates in learning activities			
Seeks help when needed			
Demonstrates organizational skills			
Completes work			
LEARNING COMMUNITY BEHAVIORS			
Resolves conflict appropriately	Teacher: JANE MOORE		
Works cooperatively with others			
Practices self control			
Follows school and classroom rules			
Respects rights and property of others			

1st Tr. 2nd Tr. 3rd Tr.

Academic Success/Behavior Standards

4	<ul style="list-style-type: none"> • Consistently meets behavior and work expectations • Rarely needs assistance or reminders from adults to maintain appropriate behavior or to sustain work habit 	3	<ul style="list-style-type: none"> • Most of the time meets expectations • Can maintain appropriate behavior and sustain the work habit over a substantial period of time • Needs occasional reminders or assistance from adults for appropriate behavior or work habit 	2	<ul style="list-style-type: none"> • Some of the time meets expectations • Can maintain appropriate behavior and sustain the work habit for a short period of time • Needs frequent reminders or assistance from adults for appropriate behavior or work habit 	1	<ul style="list-style-type: none"> • Seldom meets expectations even with assistance • Relies on adults for limits to remain in control and maintain appropriate behavior or to sustain the work habit
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Teacher Comments

Term1

Term2

Term3



Browse Unit Calendars > Math 5

Bryant, Andrea | Grade 5 | Mathematics | Sylvio Gilbert Elementary

	Standards	Essential Questions	Content	Skills	Assessment	Activities	Re
<p>Place Value & Number Sense (Week 1, 2 Weeks)</p>	<p>CCSI: Mathematics, Grade 5, Number & Operations in Base Ten 5.NBT.A. Understand the place value system.</p> <ul style="list-style-type: none"> 5.NBT.A.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. 5.NBT.A.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. 	<p>How much is a million? When I divide by 10, 100, 1000, 10000 it is the same as what? Multiplying by 1/10 1/100 1/1000 1/10000. How do I read a number over 100,000? How do I read a decimal? How do I multiply by a power of ten? How do I divide by a power of ten?</p>	<p>1. Place Value: multi-digit numbers to millions, expanded form, powers of ten 2. Multiplication: powers of ten patterns, multiples of 10 and 100, all-partials method, arrays, standard algorithm, exponents, standard algorithm 3. Word Problems: multi-step, multi-digit, addition, subtraction, multiplication, algebraic expression, equation 4. Measurement: conversion, centimeters, meters</p>	<p>1a. Read, write, and order numbers to the millions 1b. Decompose and compose large numbers into place value units and write numbers in expanded form 2a. Multiply whole numbers by multiples of 10 and 100 (powers of 10) and explain patterns in the number of zeros in the product 2b. Multiply multi-digit numbers using the standard algorithm and justify answers with arrays and/or partial product models 2c. Use whole number exponents to denote powers of 10 2d. Estimate products to justify reasonableness of answers 3a. Estimate and solve multi-step word problems using the four operations, and write equations with a letter to represent the unknown 3b. Write algebraic expressions and equations to represent numerical situations involving whole numbers 3c. Interpret and explain numerical expressions and equations without having to solve them 4a. Measure length in centimeters and convert to meters</p>			
<p>PREM (Week 1, 36 Weeks)</p>	<p>CCSI: ELA & Literacy in History/Social Studies, Science, & Technical Subjects K-5, CCSI: Grade 5, Capacities of the Literate Individual Students Who are College and Career Ready in Reading,</p>	<p>How did you solve the question? Why does your answer make sense? Can you draw a diagram that would</p>	<p>1. Working Collaboratively: listening, contributing, leading, following 2. Ways to Solve Math Problems: pictures, break up the problem, connect 3. Vocabulary: content</p>	<p>1. a.) Support each member of the team to find unique solutions to mathematics problems. b.) Recognize the importance of listening and contributing to all</p>		<p>VoiceThread Mathematics Class.pptx</p>	

B-1

- They demonstrate independence
 - They build strong content knowledge
 - They comprehend as well as critique.
 - They value evidence.
 - They use technology and digital media strategically and capably
- help you understand?
- Are there multiple ways to solve?
- How can we collaborate with people we don't get along with?
- How do we work in groups effectively to get work done on time?

CCSI: ELA & Literacy in History/Social Studies, Science, & Technical Subjects K-5, CCSI: Grade 5, Speaking and Listening

Comprehension and Collaboration

1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively

- SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
- SL.5.1a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
- SL.5.1b. Follow agreed-upon rules for discussions and carry out assigned roles.
- SL.5.1c. Pose and respond to specific questions by making comments that contribute to the discussion and

members of the group.

2 a.) **Draw** pictures to solve the problem
 b.) **Separate** the problem into parts to make it easier
 c.) **Use** what you know already about mathematics to help
 d.) **Record** information that the problem gives that will be useful

3. a.) **Determine** and **Encorporate** domain specific vocabulary when writing
 b.) **Define** the vocabulary either within the text or in a glossary.

4 a.) **Explain** key concepts as discussed in class in writing

B-2

remarks of others.

- SL.5.1d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

- SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

Unit 1 & 2: Big Numbers
(Week 2-4 Weeks)

CCSI: Mathematics, Grade 5, Operations & Algebraic Thinking
5.OA.A. Write and interpret numerical expressions

- 5.OA.A.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.

CCSI: Mathematics, Grade 5, Number & Operations in Base Ten
5.NBT.A. Understand the place value system

- 5.NBT.A.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

How much is a million?

When I divide by 10, 100, 1000, 10000 it is the same as what?
Multiplying by 1/10 1/100 1/1000 1/10000.

How do I read a number over 100,000?

How do I read a decimal?

How do I multiply by a power of ten?

How do I divide by a power of ten?

READING, ROUNDING, WRITING & COMPARING NUMBERS

USING STANDARD FORM, WORD FORM, EXPANDED FORM

PLACE VALUE

1. Place Value: multi-digit numbers to millions, expanded form, powers of ten

2. Multiplication: powers of ten patterns, multiples of 10 and 100, all-partials method, arrays, standard algorithm, exponents, standard algorithm

3. Word Problems: multi-step, multi-digit, addition, subtraction, multiplication, algebraic expression, equation

4. Measurement: conversion, centimeters, meters

1a. Read, write, and order numbers to the millions
1b. Decompose and compose large numbers into place value units and write numbers in expanded form

2a. Multiply whole numbers by multiples of 10 and explain patterns in the number of zeros in the product

2b. Multiply multi-digit numbers using the standard algorithm and justify answers with arrays and/or partial product models
2c. Use whole number exponents to denote powers of 10

2d. Estimate products to justify reasonableness of answers

3a. Estimate and solve multi-step word problems using the four operations, and write equations with a letter to represent the unknown

3b. Write algebraic expressions and equations to represent numerical situations involving

Unit 2 Core Aligned Math Assessment
Other written assessments

Grade 5 Unit 2 Math Assessment

Content Note: Prior to delving into Unit 2, lesson 6 from Unit 1 will provide students with models and diagrams for use throughout the year. That lesson, along with the DPPs, will provide review of grade 4 skills. You'll notice that this review of grade 4 skills will also be touched upon throughout the first 6 weeks, with lesson concepts, DPPs and the Unit 2 Lesson 3 blackline master, for those students still in need of review. However, a full 6 week unit designed to review grade 4 skills is NOT the intent of the instructional plan.

Unit 2 - This unit extends understanding of place value for large numbers (including powers of 10 and exponents) and multiplication of multi-digit numbers. Also, it will introduce the idea of taking word problems and translating them into mathematical expressions, which will be a thread that is continued throughout the year, in problem-solving settings.

Suggested Pre/Review Focus and DPP's:
Multiplication & division facts, multi-digit computation, **Unit 1 DPPs:** A, B, G, J, L, P, R; **Unit 2 DPPs:** A, C, D, E, G, H, I, K, L, M, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, BB, C, DD)

Common Core Aligned DPP's Unit 2:
B, C, D, E, F, G, H, I, K, L, M, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, BB, CC, DD

Preliminary Work: Trailblazers Unit 1 Lesson 6 - Practice problems-solve multi-step word problems using a visual graphic organizer-introduce bar model if it is not familiar to students (change the numbers if the problems are too difficult for some students) Problems 1-6. DAB p. 6 has additional problems. Write equations to represent each problem. This is where practice translating from word problems to mathematical equations occurs-see links under resources for review, practice, & modifications for solving word problems if needed (8-10)

Additional Lesson A: Numerical Expressions- write expressions to represent mathematical situations (calculations) include parentheses

B-3

5.NBT.B. Perform operations with multi-digit whole numbers and with decimals to hundredths.

- 5.NBT.B.5. Fluently multiply multi-digit whole numbers using the standard algorithm.

CCSI: Mathematics.
CCSI: Grade 5.
Measurement & Data
 5.MD.A. Convert like measurement units within a given measurement system

- 5.MD.A.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

3c. Interpret and explain numerical expressions and equations without having to solve them

4a. Measure length in centimeters and convert to meters

numerical expressions without having to solve them. (Students need multiple experiences throughout the year with expressions that use grouping symbols to develop understanding of when and how to use parentheses, brackets, and braces-first with whole numbers-then with decimals and fractions.) Use the attached examples to foster classroom discussions around writing and interpreting expressions or use examples of your own. Follow up with at least one of the attached activities. (2)

Trailblazers Unit 2

Lesson 1: Reading and Writing Big Numbers- developing number sense for large numbers (skip reading the play)- use DAB p. 10-19 for expanded form practice, number line, and game: *Spin and Read* (2-3)

Lesson 2: Facts I Know- use area (array) visual model to review relationship between x and - facts (inverse operation) and practice triangle flash cards--have students make piles of "Facts I know". use vocabulary: product, quotient, divisor, fact families, commutative property of multiplication (1)

Lesson 3: The Base Ten Number System- SKIP lesson-use parts of BLACKLINE MASTER ONLY on p.79 and 83 to check for understanding; review only if needed (0)

Lesson 5: Multiplication- Part 1-multiply by multiples of 10 and 100 (powers of 10) and explain patterns in the number of zeros in the product-

use attached activity: *Multiplying a Whole Number by a Multiple of 10* and Common Core State Standard (CCSS) Activity 1-this concept will continue in Lesson 8; Part 2: model multi-digit multiplication with base ten blocks and translate to the all partials method (partial product), model using an array and make connections to the standard algorithm (TB calls it the compact method)- see link in resources for more background information about place value strategies and models for multi-digit multiplication if needed (6-8)

Lesson 6: Estimating Products- use convenient numbers when multiplying to estimate products and justify reasonableness of answers (hint: use smaller numbers to introduce concept) (1-2)

Lesson 8: Exponents and Large Numbers- you may choose to use parts of this lesson which relate to Common Core Standard: 5.NBT.2 or you may choose to use the attached link as a replacement lesson to generate classroom discussion about place value and the relationship between a digit in one place and the same digit in the place to its right, powers of 10, and exponents-see resources for additional background information if needed (1-2)

Lesson 9: Stack-Up- use lesson to review measuring centimeters and convert to meters; and then solve stack-up problems. do not use as an assessment (1)

Unit 1 Lesson 6: Common Core Tables 1 & 2-Definitions & examples of Word Problem Types

Additional Lesson A: Discussion examples for writing and interpreting expressions

Additional Lesson A: Roll and Answer-partner activity-write numerical expression to match description

Additional Lesson A: Interpret numerical situations and match them with algebraic

Decimals
(Week 3, 4 Weeks)

CCSI: Mathematics,
CCSI: Grade 5,
Number & Operations
in Base Ten
5.NBT.A. Understand
the place value system.

- 5.NBT.A.3
Read, write, and compare decimals to thousandths.
- 5.NBT.A.3a.
Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.
- 5.NBT.A.3b.
Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

1a. Represent decimals using visual models (centwheel and grid models)

1b. Explain patterns in the placement of the decimal point when multiplying decimals

1c. Read and write decimals to the thousandths using base-ten numerals, number names, expanded form

1d. Compare and order decimals, record using $>$, $<$, $=$, symbols

1e. Round decimals to any place and use place value to explain

1f. Add and subtract decimals to hundredths and justify with visual models

1g. Multiply and divide decimals by powers of ten and justify placement of the decimal point

1h. Explain the pattern generated when multiplying or dividing by powers of ten

1i. Estimate and multiply decimals to hundredths and explain using concrete models, place value strategies, and/or properties of operations

2a. Solve real world and mathematical word problems involving measurement by converting units within a given measurement system including decimals

 **Additional Lesson A: Who Has Game** to practice interpreting algebraic expressions

 **Unit 2 Lesson 5: Explain** patterns when multiplying whole numbers by multiples of 10 & 100

 **Unit 2 Lesson 5: Trailblazer CCSS Activity 1-patterns & multiplying** by numbers ending in 0

 **Unit 2 Lesson 8: Place Value-problems** for discussion-powers of 10 and exponents

Unit 3: Fractions
(Week 6, 5 Weeks)

CCSI: Mathematics,
CCSI: Grade 5,
Number &
Operations—Fractions

5.NF.A. Use equivalent fractions as a strategy

What are some of the basic rules of fractions?
Ex: $x/1 = x$ & $x/0 =$

1. Fractions: improper, mixed numbers, equivalent, word problems, benchmarks, number line, numerator, denominator

2. Measurement: distance

1a. Represent fractions on a number line diagram, with pattern blocks and other visual fraction

Content Note: This unit helps solidify student understanding of fractions and reviews the concept of equivalent fractions. While it does not specifically address grade 5 core standards, it is currently believed to be necessary as an entry into further study of fractions.

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**AUGUSTA SCHOOL DEPARTMENT
PROFESSEIONAL DEVELOPMENT**

OCTOBER 11, 2013

<i>ELEMENTARY PRE-K TO 6 Farrington School</i>		<i>Cony Grades 7-12 Cony High School</i>	
7:30-8:00	Carbs, coffee & juice Wellness Drawing	7:30-8:00	Carbs, coffee & juice Wellness Drawing
8:00-9:30	"I Can" Establishing Common Learning Targets (Gym)	8:00-9:30	Introduction Smarter Balanced Common Core-Literacy Band Room
9:40-11:30	Curriculum by grade level Room assignments –TBA Inventory Template	9:40-11:30	Curriculum by Departments Check literacy standards Cross curricula standards Work in department area spaces Inventory Template
11:30-12:15	Lunch (Provided)	11:30-12:15	Lunch (Provided)
12:15-1:30	Smarter Balanced Assessment By grade levels Complete practice test protocol	12:15-1:30	By departments- Assess common core standards addressed within courses
1:30-1:45	Break	1:30-1:45	Break
1:45-2:45	Develop & Practice "I Can" statements-Worksheet	1:45-2:45	Continue common core standards work by department
2:45-3:00	Complete Exit Slip	2:45-3:00	Complete Exit Slip

SPECIAL EDUCATION CCSS AND PROFICIENCY BASED DIPLOMA ACTIVITIES

- 9/21/2012 -Diane Briars-Implementing CCSS for Math Part 1 (6 hrs), D. Hutchins, P. Colwell, S. Peatfield, K. Gibbs, J. Hersey
-Laura Robb Workshop, M. Loring
- 3/15/2013 -Curriculum Mapping Leadership Team, M. Loring, S. Wheeler
-Diane Briars-Implementing CCSS for Math Part 2 (6 hrs), P. Colwell, S. Peatfield, K. Gibbs, J. Hersey
- 4/8/13 -MSHLA Standards-Aligned Communication Assessment Framework for School-Based Speech-Language Services (6 hrs), J. Murphy, P. Bernier
- 6/24-26/13 -MADSEC Conference CCSS and How it Relates to Special Ed, S. Thibodeau
- 7/9-13/2013 -Special Ed Law Class, S. Thibodeau
- 7/23-26/13 -School Law Class, S. Thibodeau
- 9/26/13 -Maine DOE, The Mechanics of Writing IEP Goals Aligned with CCSS, M. Biter, A. Vose, S. Thibodeau
- 10/11/13 -Goal Writing CCSS (1.5 hrs), P. Cowell, K. Gibbs, J. Hersey
-Presentation of 9/26/13 information to Special Education Staff, M. Biter, S. Thibodeau
CCSS Workshop at Cony, S. Wheeler
-Common Core Workshop – Unpacking Writing Standards with Students, V. Sugden
- 10/17-18/13 -MADSEC Conference – Writing IEP goals based on proficiency based diplomas and transition activities and goals, S. Thibodeau
- 11/19/13 -Webinar Common Core State Standards, S. Thibodeau
- 1/7/14&5/19/14-LRE training, how it relates to general ed and spec ed supporting student in regards to CCSS
- 1/28/14 -Creating Standards-Based IEP's: Nuts and Bolts Approach Phase, M. Biter, A. Vose
- 1/14-6/14 -Met every Wed with LA or Math mentors to align maps to CCSS, K. Gibbs, D. Benson
- 2/5/14 -Common Core LA Training, K. Gibbs, D. Benson
- 2/12/14 -Common Core Math Training, K. Gibbs, D. Benson
- 5/14/14 -Proficiency Based Learning (1 hr), P. Colwell, J. Hersey
- SY 2013-14 -Aligning IEP's to the CCSS (goal research), D. Franklin, V. Sugden
- SY2013-14 -Book Study Group at Hussey – Pathways to the Common Core, J. Murphy, A. Vose
- 8/14-5/14 -Speech Clinician Meetings CCSS Discussions, C. Vankampen, P. Bernier, N. Benoit, J. Murphy, L. Blackstone
- 2/14-6/14 -PBL Committee CCSS Discussions, C. Vankampen
- 6/23-24/14 -MADSEC Director's Academy Co-Teaching, S. Thibodeau
- 8/2014 -EDU504 Content Area Literacy and the CCSS, A. Fenton, T. Roberts
- 8/13-14/14 -New Administrator's meeting Implications of proficiency based diplomas and writing goals aligned with CCSS, S. Thibodeau
- 9/9/2014 -Math Department Meeting, D. Hutchins
- 9/16/14 -State Committee meeting, S. Thibodeau
- 9/23/14 -Proficiency Based Education Overview (.5 hrs), P. Colwell, J. Hersey

Getting to Proficiency LD 1422 Augusta Public Schools/Cony

Timeline:

Starting with the Class of 2018, students will need to demonstrate proficiency in all 8 content areas of Maine's Learning Results.

Department of Education Goal:

In the spring of 2018, the students now in eighth grade will become the state's first class to graduate having demonstrated their mastery of all State standards in the eight content areas of the Maine Learning Results." (DOE website)

Augusta School Department Goal:

"In the spring of 2018, students will graduate having demonstrated their mastery of all State standards in eight content areas of the Maine Learning Results."

Calendar

2013-2014

- Shift Standards-Based PLC to Standards-Based Leadership Team
- Create budget to implement LD 1422
- Introduce cross-curricular literacy standards for entire staff
- Introduce Smarter-Balance Practice tests for staff in Math and ELA
- Fall Department Meetings
 1. Using Atlas curriculum maps, align curriculum to MLR, Common Core, and/or Next Generation Standards
 2. Discussion of proficiency and common assessments
 3. Determine deficiencies in program and recommend changes
- Revise Program of Studies to discuss proficiency of MLR with courses
- Spring Department Meetings
 1. Further discussion of proficiency and common assessments
 2. Common Template for graduation standards
 3. Begin work on graduation standards
- Review reporting structure for proficiency in standards

2014-2015

- Review the Smarter Balance resources available to schools
- Administer the Smarter Balance test in the last 12 weeks of school

2016-2017

- Complete district's goal of having students demonstrate proficiency in 100% of Maine's Learning Results

2017-2018

- Fulfill the requirements that all students show proficiency in 8 content areas of Maine Learning Results
- Graduate the first class of proficiency-based, standards-based diploma

Cony High School and Middle School Action Plan LD 1422 Proficiency-Based Diploma

Task	Assignment	Timeline	Task Completion
Create a Leadership Team with staff to spearhead the process with Rep from each Department	Kim Silsby-Principal Stew Brittner- Assistant Principal	September, 2013	Completed
The Program of Studies includes language about proficiency.	Helen Renko- Guidance, Administration, Central Office	February ,2014	Completed
The Leadership Team develops a timeline to meet the expectations of LD 1422	Leadership Team, Administration	February, 2014	Completed
Departments meet to align curriculum to MLR, Next Generation, and/or Common Core.	Department Heads	Sept 2013-June 2014	Completed
Leadership Team introduces and manages the process of implementation of LD 1422	Administration and Leadership Team	Sept 2013-on Presentation to Staff on two occasions Early Release and workshop days	Partially completed
Departments prioritize "power standards" and assign course with standards	Department heads	Sept 2013-on	In process
Departments determine standards that are not met in current courses and discuss options	Department Heads	Sept 2013-on	Completed
Additional Courses/credits added to met graduation standards	Department Heads	Extra quarter class added to Math and an extra quarter class added to Science to meet standards	Completed
Departments work to create "common assessments" where student demonstrate proficiency on standards. Priority is given to Freshmen courses for Class of 2018.	Department Heads	Sept. 2013-on	In process
Common Assessments are piloted by departments	Department heads, teachers	Sept. 2014-June 2015	2014-2015
Common language is approved for levels of understanding	Leadership Team, Administration	Summer 2014	Completed
Technology needs are	Guidance, IT,	On-going	2014-2015

addressed and work is done with Web2School to show proficiency	Administration		
Staff discussions are had regarding averaging grades, habits of mind, late work; recommendations are made to Leadership Team and Administration for decisions	Administration and leadership team	Early Release and Workshop days 2013-2014-2015	In process
Departments recommend level of performance for proficiency to the Administration and leadership team	Department Heads, Administration, and Leadership Team	2014-2015	In process
Leadership Team members and Administration have conversations with other schools/organizations about their implementation	Leadership Team, Administration	2013-2014; Discussions with Noble HS and Great Schools Partnership	In process
Departments continue to work on Curriculum Mapping to document curriculum.	Departments	Sept. 2011-on	In process
Staff members utilize the best instructional practices to help students achieve proficiency	Administration and Leadership Team	Sept. 2013-on	In process
Leadership Team and staff discuss options for multiple pathways	Administration and Leadership Team; Innovative Schools subcommittee	March 2014-March 2015	In process
Staff implements Smarter Balanced testing	Administration	2014-2015	May 2015
Staff members work on formative assessments to determine level of student understanding.	Department heads, teachers	2014-2015	2014-2015
Staff works on ways to help students who don't show proficiency on standards (jump start, vacation school, finishing school)	Leadership Team, Administration	2014-2015	In process
First proficiency based diploma is awarded	All stakeholders		June 2018

*Evidence G
pages 1-4*

**Augusta Public Schools
Cony Middle and High School**

**Graduation Standards,
Performance Indicators &
Learning Targets for Mathematics**

Aligned with Common Core & Smarter Balanced

Grades 9-12

Fall 2014

GRADUATION STANDARD 1: Number & Quantity

Reason and model quantitatively, using units and number systems to solve problems.

By the end of 12th grade students should be able to ...

Use the properties of exponents, rational exponents as well as rational and irrational numbers.

*Extend the properties of exponents to rational exponents. (CCSS HSN.RN.1-2)

*Use the properties of rational and irrational numbers. (CCSS HSN.RN.3)

*Reason quantitatively and use units to solve problems. (CCSS HSN.Q.1-3)

*Perform arithmetic operations with complex numbers. (CCSS HSN.CN.1-2)

*Use complex numbers in polynomial identities and equations. (CCSS HSN.CN.7

Learning Targets

I can:

1. Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.

2. Rewrite expressions involving radicals and rational exponents using the properties of exponents.

3. Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational.

1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

2. Define appropriate quantities for the purpose of descriptive modeling.

3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

1. Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.

2. Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.

7. Solve quadratic equations with real coefficients that have complex solutions

GRADUATION STANDARD 2: Algebra - Interpret, represent, create and solve algebraic expressions.

By the end of 12th grade students should be able to ...

Interpret, rewrite rational expressions and write expressions in equivalent forms to solve problems. Understand the relationship between zeros and factors of polynomials and use polynomial identities and arithmetic operations to solve problems. Create equations that describe numbers or relationships and then be able to solve equations and inequalities in one variable, solve systems of equations, and represent and solve equations and inequalities graphically, and reason about the solving equations process.

- * Interpret the structure of expressions. (CCSS HSA.SSE.1-2)
- * Write expressions in equivalent forms to solve problems. (CCSS HSA.SSE.3)
- * Perform arithmetic operations on polynomials. (CCSS HSA.APR.1-2)
- * Understand the relationship between zeros and factors of polynomials. (CCSS HSA.APR.3)
- * Create equations that describe numbers or relationships. (CCSS HSA.CED.1-4)
- * Understand solving equations as a process of reasoning and explain the reasoning. (CCSS HSA.REI.1-2)
- * Solve equations and inequalities in one variable. (CCSS HSA.REI.3-4)
- * Solve systems of equations. (CCSS HSA.REI.5-7)
- * Represent and solve equations and inequalities graphically. (CCSS HSA.REI.10-12)

Learning Targets

I can:

1. Interpret expressions that represent a quantity in terms of its context. ★
2. Use the structure of an expression to identify ways to rewrite it.

3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. ★
 1. 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.

2. Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$.

3. 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.

1. Create equations and inequalities in one variable and use them to solve problems.

2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.

4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.

1. 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.
2. Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
4. Solve quadratic equations in one variable.
5. 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.
6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
7. Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically
10. 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).
11. 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. ★
12. 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.

Evidence H

Stats and Probability

Functions	Algebra 1	Geometry	Algebra 2	Probability
H.SF.IF Understand the concept of a function and use function notation.				
IF.1	2	0	2	0
IF.2	2	0	2	0
H.SF.IF Interpret functions that arise in applications in terms of the context.				
IF.4	2	0	2	0
IF.5	2	0	2	0
IF.6	2	0	2	0
H.SF.IF Analyze functions using different representations.				
IF.7				
IF.7A	1	0	2	0
IF.7B	1	0	2	0
IF.7C	0	0	2	0
IF.8	1	0	1	0
IF.9	2	0	2	0
H.SF.BF Build a function that models a relationship between two quantities.				
BF.1	2	0	2	0
BF.1A	1	0	2	0
BF.1B	1	0	2	0
H.SF.BF Build new functions from existing functions.				
BF.3	0	0	2	0
H.SF.LE Construct and compare linear, quadratic, and exponential models and solve problems.				
LE.1				
LE.1A	1	0	2	0
LE.1B	2	0	2	0
LE.2	1	0	1	0
LE.3	0	0	1	0
H.SF.LE Interpret expressions for functions in terms of the situation they model.				
LE.5	1	0	1	0

Assessed

Significantly Covered	2
Somewhat Covered	1
Not Covered	0

Key	
IF	Interpreting Functions
BF	Building Functions
LE	Linear and Exponential Models

LD 1422: Getting to Proficiency
School Board Session
8/27/14

The Specifics

Beginning January 1, 2018, in order to receive a diploma indicating graduation from a secondary school, a Student Must:

What is Proficiency-Based Education?

A system of instruction, assessment, grading, and academic reporting that are based on students demonstrating proficiency of the knowledge and skills they are expected to learn before they are promoted to the next grade level, or receive a high school diploma

The History...

- 1983 A Nation at Risk Report
- 1997 Maine's Learning Results: Grade level curricula were aligned with Maine standards; updated in 2007
- 2010 Common Core State Standards released in English Language Arts, Mathematics, & Literacy in History/Social Studies, Science & Technical Subjects
- Standards developed in collaboration with teachers, administrators and experts from national organizations.
- 2009-2011 States adopt the Common Core, including Maine

- A. Demonstrate that the student engaged in educational experiences relating to English language arts, mathematics and science and technology in each year
- B. Demonstrate proficiency in meeting state standards in all content areas of the system of learning results
- C. Demonstrate proficiency in each of the guiding principles
- D. Meet other local requirements specified by the governing body of the school administrative unit

Local Decision....

How a school district implements the awarding of a proficiency-based diploma is a local decision.

The district decides:

- the set of graduation standards students must demonstrate,
- the assessment system that measures student proficiency and
- the level of proficiency necessary for graduation or moving to the next grade.

thinklocal

The Law in Maine

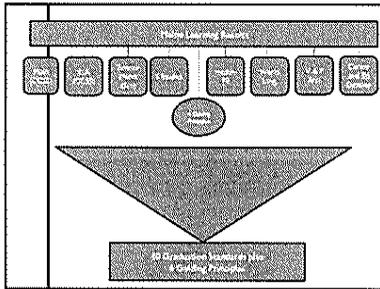
2012-2013 Maine Revised Statutes
Title 20-A: Education
Part 3: Elementary and Secondary Education
Chapter 207-A: Instruction-
Subchapter 3: Secondary Schools

§4722-A.
Proficiency-Based
Diploma Standards

IN ADDITION,

"Students must be allowed to demonstrate proficiency by presenting multiple types of evidence, including but not limited to teacher-designed or student-designed assessments, portfolios, performance, exhibitions, projects and community service."

Continuum of proficiency based education



Language of each content area

Level	ELA	Science	Math	History	Physical Science	Earth Science	Biology
1	Domains	Standards	Domains	Standards	Standards	Standards	Standards
2	Clusters	Anchor Standards	Disciplinary Core Ideas	Performance Indicators	Performance Indicators	Performance Indicators	Performance Indicators
3	Standards	Standards	Performance Expectations	Descriptions	Descriptions	Descriptions	Descriptions

* Basically all of them have 3 levels to organize material

Next Generation Science

Physical Science

First Step.....Common Language for all

- Domains
- Clusters
- Learning Targets
- Performance Indicators
- Standards
- Parameters
- Anchor Standards
- Performance Expectations

Maine Learning Results

Common Core ELA

Reading Standards for Literature

Maine Learning Results Social Studies

Level 1

Level 2

Level 3

Common Core MATH

How to read the grade level standards

Maine Learning Results Visual and Performing Arts

Maine Learning Results Health and PE

1. **Health and PE** standards are designed to ensure students are physically active, healthy, and able to maintain a healthy weight.

2. **Health and PE** standards are designed to ensure students are physically active, healthy, and able to maintain a healthy weight.

3. **Health and PE** standards are designed to ensure students are physically active, healthy, and able to maintain a healthy weight.

4. **Health and PE** standards are designed to ensure students are physically active, healthy, and able to maintain a healthy weight.

Cross-curricular standards (Guiding Principles in MLR)

- ✓ A clear and effective communicator
- ✓ A self-directed and lifelong learner
- ✓ A creative and practical problem solver
- ✓ A responsible and involved citizen
- ✓ A collaborative and quality worker
- ✓ An integrative and informed thinker

THE ROAD TO TRAVEL

- Departments/Grade levels determine standards that are not met in current courses (Integrated Science and Stats and Probability courses)
- Departments/Grade levels work to create "common assessments" where student demonstrate proficiency on standards.
- Departments/Grade levels recommend level of performance for proficiency to the Administration and leadership team

Maine Learning Results World Languages

1. **World Languages** standards are designed to ensure students are able to communicate in a second language.

2. **World Languages** standards are designed to ensure students are able to communicate in a second language.

3. **World Languages** standards are designed to ensure students are able to communicate in a second language.

4. **World Languages** standards are designed to ensure students are able to communicate in a second language.

Next Step

Example of Cony

THE ROAD TO TRAVEL

- Departments/Grade levels continue to work on Curriculum Mapping to document curriculum.
- Staff ensures instructional practices will help students achieve proficiency.
- The Program of Studies includes language about proficiency.
- Leadership Team and staff discuss options for multiple pathways

Maine Learning Results Career Development

1. **Career Development** standards are designed to ensure students are able to explore and prepare for a career.

2. **Career Development** standards are designed to ensure students are able to explore and prepare for a career.

3. **Career Development** standards are designed to ensure students are able to explore and prepare for a career.

4. **Career Development** standards are designed to ensure students are able to explore and prepare for a career.

THE ROAD TO TRAVEL

We created a Leadership Team with staff to spearhead the process

The Process:

- Departments/Grade levels meet to align curriculum to MLR, Next Generation, and/or Common Core.
- Departments prioritize standards and assign courses with standards

Leadership Team
 Pat Grogan, Math
 Clark Freeman, Math
 Leanne Rodriguez, ELA
 Mary Rupa, PE
 Heather Bishop, ELA
 Teresa Braxton, VPA
 Dennis Davis, Wellness
 Lauren Dale, Science
 Helen Pankas, Guidance
 Susan Moore, Languages
 Anne Giggs, Languages

THE ROAD TO TRAVEL

- LD 1422 Leadership Team works on reporting and manages process.
- Staff implements Smarter Balanced testing and works on formative assessments to determine level of student understanding.
- Staff works on ways to help students who don't show proficiency on standards.

Budget



- Governor and Legislature passed fiscal note with the bill for 1/10 of 1% of your school district budget.
- To us that is about \$25,000.
- The funds will be used to pay for subs, teacher work, leadership team, etc.

English Language Acquisition and Assessment Indicator

Indicator 1: English Language Acquisition and Assessment

Indicator 2: English Language Acquisition and Assessment

Indicator 3: English Language Acquisition and Assessment

Indicator 4: English Language Acquisition and Assessment

Indicator 5: English Language Acquisition and Assessment

Getting to Proficiency: Helping Mainstream Students

Getting to Proficiency: Helping Mainstream Students

Moving Forward



- DOE Extension Options & Feedback
- Definition of Proficiency

Getting to Proficiency: Helping Mainstream Students

Getting to Proficiency: Helping Mainstream Students

Getting to Proficiency: Helping Mainstream Students