

To: Cheryl Maloney  
From: Pamela Bator  
Re: Curriculum Update Report 2013-2014  
Date: October 28, 2014

## Curriculum Update Report 2013-2014

### Introduction

The field of education is ever changing. Over the past few years, there have been many state and federal initiatives that have focused and guided the work our teachers and students do every day. The timing and demands of these mandates can feel overwhelming; however some of these simply expand the work we have been doing all along. From Sheltered English Immersion (SEI) to District Determined Measures (DDMs), our faculty members are working on making teaching accessible to all and assessments tied to growth. Never before in the field of education has there been such a close and targeted focus on teaching and learning.

During the 2013-2014 school year, all departments at all grades created District Determined Measures (DDMs) in order to fully implement these assessments during the 2014-2015 school year. These measures, while required by DESE, are our own assessments and we believe they best assess the curriculum, skills, and practices we most value.

What follows is a brief summary of curriculum work accomplished during the 2013-2014 school year and highlights of summer work that relates to teaching and learning.

Three departments are currently in some phase of our Program Review Process. This phase is noted within the department update below.

### Wellness Department – K-12

*(Review finalized two years ago; in full implementation phase)*

#### All Levels

Continued emphasis on maximizing movement time within each given class; striving to have each student have the maximal time moving, while also allowing for appropriate instruction and information processing.

Continued focus on developing a meaningful and responsive Adapted Physical Education program.

- All teachers were trained in the Adapted Physical Education Assessment Scale II in June 2013, and have been using it to more appropriately identify and address student needs.

## Elementary

Collaborated in the development and introduction of a new class in Human Development (Puberty) built upon the Human Body Systems Unit in grade 5.

- Integration and collaboration with adjustment counselor, school nurse, elementary curriculum specialist, and grade 5 teachers.

## Middle School

Continued to experiment with new P.E. units, especially those that 8<sup>th</sup> grade girls have identified as being of interest, such as Yoga, Zumba, etc.

## Middle School and High School

Adopted new Human Sexuality curriculum (Get Real) at the High School last year. Training for Middle School staff and implementation of the companion Middle School program will happen this year.

Introduced concept of mindfulness into the sophomore Health Education curriculum last year. Middle School and High School health educators all completed both a Mindfulness Fundamentals and Mindfulness Curriculum course last year, and will continue implementation this year.

## Visual Arts – K-12

*(Review finalized; entering implementation phase)*

Adopted “Studio Habits of Mind” as the framework for assessment. Developed by Lois Hetland and Harvard’s Project Zero, this list of 8 Studio Habits of Mind emerged from a study looking at the benefits of art education on students. The department is now in the process of creating assessments that will help measure student progress in each of these eight areas. This framework includes the following:

**Stretch and Explore:** explore, take risks, capitalize on mistakes

**Reflect:** think and explain process/intention/decisions; evaluate work of self and others

**Engage and Persist:** focused and sustained effort

**Observe:** notice things they might have otherwise missed

**Understand Art Community:** art history, contemporary, and student relationship to art world

**Envision:** mental images and imagination

**Develop Craft/ Studio Practice** (studio maintenance)

**Express:** personal vision and meaning

## World Languages – 1-12

*(Hosted external review; awaiting response from external review committee)*

Continued to develop alternative learning experiences for students seeking such opportunities or whose schedules do not allow them access.

- Currently 3 high school students are doing full on-line Mandarin courses using the Rosetta Stone platform, while others mix this tool with the conventional classroom experience to create a hybrid learning environment.
- Honors level Spanish teachers are piloting a hybrid approach in their classes using mixed grouping, innovative technology, flipped classrooms, etc.
- In French, a faculty member is developing an on-line on-ramp AP French course through edX that we expect will help draw more students into the rigors of our AP French program.

Continued promotion of global education.

- Short-term trips to Costa Rica, Ecuador, Quebec, Italy, Peru, China, and France are offerings that provide our students with opportunities to put into practice that which they have learned and, to add to that, new learning experiences.
- We continue to support the year-long Rombas program, the semester-long Brazil exchange, and the two month China exchange.
- This year, we added an exchange to Argentina (6 WHS students spending 3 weeks outside Buenos Aires). We are working to expand this opportunity to Quimper, France.
- Twelve Chinese visitors from Luoyang visited our schools and host families.

Continued contribution to the field of World Languages.

- A faculty member presents perennial training for AP Spanish teachers in workshops.
- A faculty member is a lead teacher in a Middlebury summer immersion program.
- A faculty member has been invited to the University of Bogotá to present his paper *La Desconstrucción del Elitismo* (The Deconstruction of Argentinian Social Class).

## English Language Arts

*(In the first year of a two-year self-study)*

### Elementary

Introduced and developed Reading Workshop Model in grades 2, 3, and 5.

*(This model was introduced to Grade 3 at Country School and Grade 4 at Field School during the 2012-2013 school year.)*

- This professional development enables teachers to provide whole class, small group, and individual support while invisibly incorporating a gradual release of responsibility to the learner. The workshop begins with a whole group mini-lesson, progresses to a shared experience, transitions into guided reading and independent reading, and finally ends with a whole class reflection. As students progress through these different experiences, the teacher notices their level of understanding and responds by re-teaching, prompting, or reinforcing.

Developed and introduced the integrated China Unit in grade 4. (See Science and History and Social Studies below for more details.)

- For ELA, the study included primary and secondary sources. There were many opportunities for examining the point of view of the author and how it shaped the material the students were reading. Structured around nonfiction mentor texts, the unit provided outstanding opportunities for close reading and for "rubbing" texts against each other to ascertain how events and people in history can be written about differently and how the responsibility of discerning accuracy and authenticity rests upon the reader.

Introduced reading interventions into Kindergarten.

- In the late fall, we began assessing, with DIBELS, Kindergartners who were not keeping up with the progress of their peers (or a typical K student) in the following areas: phonological awareness; letter naming; phonemic awareness. Students who qualified for additional support received two 15-minute lessons per week.
- Throughout the year, several students made accelerated progress and stopped receiving the intervention. We reduced entry into first grade interventions in 2014 by 6%.
- Those children who qualified for first grade support in 2014, after being in the K intervention, entered with noticeably higher scores on their assessments than prior years.

Added Opinion and Informational writing into the curriculum.

- Grade levels took an inventory of the kinds of writing they were teaching and began adding in those genres that were not present. The expectations are that students in K-5 will write narrative, opinion, and informational text. Teachers at WS and CS observed that opinion writing was not yet a part of their instruction. In 2013-2014, they read and used Teacher's College curriculum to teach this kind of writing. After teaching the unit, teachers met cross-team to discuss strengths of the unit and how it might be improved.

Enhanced the use of assessments to inform instruction.

- Over the past three years, teachers have developed skills in administering Teacher's College reading assessments. They know the tool, understand the administration, and have developed a bank of knowledge about typical student responses. This knowledge has enabled teachers to place children in instructional levels of text for teaching purposes and to ensure that children are reading at independent levels on their own.

### **Middle School and High School**

Created and integrated District Determined Measures (DDM) of teacher impact on student growth for the first time last year as preparation to the 2014-15 planned DDM implementation as part of the teacher evaluation model.

- Each grade-level/course team identified a central learning experience for their students and designed their DDMs to relate to these areas. Some examples include: building short analytical writing skills in the 6<sup>th</sup> grade Reading and Writing Connections class; proper organization of paragraphs and essays in 7<sup>th</sup> grade; use of rhetorical devices in persuasive writing in 10<sup>th</sup> grade; and synthesizing analysis of multiple texts in American Literature (11<sup>th</sup> grade).
- The department met over the summer to fine-tune these assessments based on this pilot year and to assess the data to improve instruction this coming year.

Continued to revise curriculum to better align with the Massachusetts Frameworks (inclusive of the Common Core) and to prepare for the implementation of PARCC.

Identified curricular opportunities to integrate compare/contrast writing about two forms of text (informational and literary or literary and media) at each grade.

### **Middle School**

Integrated the iPad initiative into the 6<sup>th</sup> grade with great success.

- Students undertook their "Bookclub" reading circles using iBook versions of a variety of

texts, enabling small groups of readers of common texts to annotate, take notes, and discuss the texts with far greater independence from the teachers as is necessitated by a “Bookclub” model (multiple texts being read at the same time).

- Other examples of new uses of the iPad across the grades of the Middle School include: filming in-class performances of scenes from *The Diary of Anne Frank* (the play) in 7<sup>th</sup> grade to review and discuss; extensive use of the iPad during the 8<sup>th</sup> grade trip to Washington, D.C. to record experiences, take pictures, research sites visited, and otherwise undertake preparatory work for their “Scrapbooks”; and fluid integration throughout the grades during most class periods for purposes such as vocabulary review (looking up definitions, creating short skits and filming them to represent the use of several words, etc.), grammar self-study, and in-class writing (facilitated by the purchase of sets of keyboards for all grades).

### **High School**

Integrated Bring your own technology (BYOT) into the 9<sup>th</sup> grade team this past year.

- Teachers are using *Google Docs* in class for group work and other collaborative processes; *Quizlet* to help students prepare for vocabulary and other quizzes; webquests to provide insight into the background of core texts; and many other tools on a very regular basis.
- This work will expand to the 10<sup>th</sup> grade this year. Members of the 10<sup>th</sup> grade team took part in the Technology department’s summer workshop to help prepare for this new opportunity.

## **Mathematics**

### **Elementary**

Continued focus on better use of assessment to inform classroom instruction on a daily basis.

- Implemented on-line formative assessment platforms in grades K-1, *Assessing Math Concepts*, and grades 2-5, *Renaissance Learning STAR Math*. Reliable data helps keeps us informed and guides us in making instructional decisions to meet the needs of learners across all grade levels, learning styles, and abilities.

Implemented the Math Workshop model across the elementary schools. This model allows teachers to target deep instruction in small-group settings to all students.

Offering professional development to elementary teachers throughout the school year in a 9-part “content + pedagogy” series.

- Topics include base ten and place value, using Cuisenaire rods to enrich our instruction, conjecturing and questioning, and standards for mathematical practice joined with rich content across the mathematical progressions.

Implemented the *Think Math* curriculum across all elementary classrooms.

- This program is aligned to the current Massachusetts Frameworks (inclusive of the Common Core) and focuses on students becoming problem posers, problem solvers, and deep, mathematical thinkers.

### **Middle School**

Continued implementation of the changes to the curriculum to better align to the common core.

- Due to our commitment to students taking Algebra in 8<sup>th</sup> grade, we are distributing four years of Massachusetts Frameworks (inclusive of the Common Core Curriculum) over three years.
- While this started last year, implementation will not be complete until next year, as many changes need to start in 6<sup>th</sup> grade and get phased in one year at a time.

Created open-ended math projects over the summer in the style of Dan Meyers with a video as a hook to encourage students to pose questions and collect information to make a prediction about a real world scenario. Our example can be found here: <https://sites.google.com/a/my.weston.org/kerwin/> .

## **High School**

Successfully piloted a yearlong project in integrating cryptology in Algebra II in an effort to promote mathematical problem solving as a sustained effort over time.

- This project will be expanded and implemented by the entire Algebra II team this year.
- A similar yearlong project in Applied Discrete Math involving elections and city planning will be piloted this year.

Implemented significant changes in AP Statistics.

- The trial of making the AP exam optional for seniors and requiring all students complete a graded AP test in class achieved the desired results. Students were more focused at the end of the year and the AP testing environment was much improved. The improvement in performance on the AP exam was as predicted.
- In addition, the end of year project (project-based learning) on evaluating the High School ranking indices was a tremendous example of an authentic assessment that culminated in a presentation to the school committee.

Created an on-ramp course with edX to prepare students for calculus.

- This was open to students this summer and 24 people signed up for the course. It will also be used in the Introduction to Calculus unit of Precalculus part II this year.
- In addition, a team of teachers worked to collect resources for students to improve their algebra skills in an effort to better enable students to change levels.

## **Science**

### **Elementary**

Developed Science Process Progress Monitoring Tool for Assessment

- Year-to-year assessment was initiated over the 2013-2014 school year. Teachers used a Weston-created rubric to assess individual students and to monitor growth in science and engineering practices (see below). Similar to the ELA and Mathematics progress monitoring, this assessment is being used by teachers to inform their instruction.
  - The science and engineering practices are:
    - Asking questions (for science) and defining problems (for engineering)
    - Developing and using models
    - Planning and carrying out investigations
    - Analyzing and interpreting data
    - Using mathematics and computational thinking
    - Constructing explanations (for science) and designing solutions (for engineering)
    - Engaging in argument from evidence
    - Obtaining, evaluating, and communicating information

- Created an interactive website with exemplars of the rubric for use when assessing students on this rubric

Developed and implemented an elementary engineering strand.

- Each grade level has developed an engineering focus for one of their science units. The experiences in each unit center on design challenges that ultimately require students to use science knowledge and understanding to meet the challenges.
  - Kindergarten: Design and Engineering – Balls and Ramps
  - Grade 1: Design and Engineering – Simple Machines at Work
  - Grade 2: Design and Engineering – Balance and Motion
  - Grade 3: Design and Engineering – Electricity and Magnetism
  - Grade 4: Museum of Science’s – Designing a Wall (part of China Unit)
  - Grade 5: Museum of Science’s – Designing a Knee Brace (part of Systems of the Human Body Unit)

Designed and implemented a strand of programming to expose all students, K-5, to logical thinking and multiple programming languages over time.

- Each grade participated in an “hour of code” designed to build from one year to the next.
  - Kindergarten and Grade 1: Using Lego to write “scripts” and control a “character”
  - Grade 2: Blockly
  - Grade 3: Code.org and Lego WeDo robotics
  - Grade 4: Lego NXT (on-brick programming)
  - Grade 5: Lego NXT (Mindstorms programming)

Provided professional development to faculty members.

- All classroom teachers learned about Bybee’s 5E lesson structure for crafting a science experience: Engage, Explore, Explain, Elaborate, Evaluate.
- Writing in science was enhanced in grades 2-5 using Betsy Fulwiler’s Box and T Chart for writing compare and contrast pieces. This will continue to be developed over the 2014-2015 school year (in partnership with ELA work).
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Developed and introduced integrated China Unit in grade 4. (See ELA above and History and Social Studies below for more details.)

### **Middle School**

Continued focus on spiraling the curriculum content throughout the Middle School grades. The core spiraled topics addressed in increasing complexity in grades 6-8 are:

- Forces/Energy: E/M spectrum from the sun, why are plants green, energy transformations in living systems.
- Building blocks of matter: atoms, molecules, chemical bonding, compounds, chemical reactions.
- Organizational framework of life: cells (structure & function).
- Properties of matter: density, appropriate building materials.
- Evolution: Earth’s history and evolution of Earth and organisms.
- The environment: abiotic and biotic changes, environmental issues.
- The scientific method of asking and answering questions.
- Design of instrumentation and use of technology in science.

## High School

Further development/use of the new science labs and the Global Education Center (GEC).

- Specific examples include:
  - Anatomy & Physiology: live interactive videoconference on total knee replacement surgery. Students were able to interact directly with the surgeon regarding the procedure in real time. (*WEEFC-supported event*)
  - Various Science Courses: Utilize the space for larger group guest speakers such as Zarin Machanda (Harvard) and her presentation on Primate behavior and evolution. (*WEEFC-supported event*)
  - Biology: Science Mentor meetings with students during Biology class time in preparation for Science Symposium and the Individual Research Project (IRP).

Continued initiatives in the development of flipped and hybrid online learning opportunities are developing with three HS courses.

- Chemistry teachers have continued to use MediaCast to create online “flipped” lessons for students.
- A life science teacher worked with software created by EdX at Harvard/MIT to create an “on-ramp” course for AP Biology. This course was designed to run for a few weeks this August and closed at the beginning of school. The purpose was to provide access to challenging content for students taking AP Biology as preparation for their beginning the course. The students were expected to watch videos and take assessments aligned with the content in order to demonstrate an understanding of the material. More than half the AP Biology students enrolled in the course, and to date, the informal feedback from students has been nothing but positive.

In response to the Science Curriculum Review, all 9<sup>th</sup> grade Physics classes embedded 4 Engineering/Design projects within their curriculum.

- With the guidance of Bill Church (Tufts), teachers met collaboratively to update design projects and implement new ones seamlessly into the Physics course.

## History and Social Studies

### Elementary

Introduced China Unit in grade 4. (See Science and History and Social Studies below for more details.)

- This unit integrates technology, social studies, science, library media, reading and writing. Students were immersed in the study of China throughout their school day that produced a feeling of cohesiveness for students and teachers during the month-long study. Students were able to think more deeply and had many more opportunities to synthesize information because of the integration of subject areas.
- This unit with a “feet-on” experience with the Traveling National Geographic Big Map of Asia. Students created giant scaled maps of China; researched a topic of interest about China; and presented their research to other students.

### Middle School

Completed the changeover in 6<sup>th</sup> grade to a Geography/World Culture base for the curriculum.

- Students will still do substantial work with governmental and economic systems, but it will be embedded into the redesigned units instead of being stand-alone segments of the



course.

- The switch to e-texts and materials from Teachers' Curriculum Institute (TCI) completes the change, and has 6<sup>th</sup> graders gaining exposure to online textbooks at the start of their middle school careers.

### **History and Social Studies**

Began to institute changes in all three courses in History (US, World, and Europe) that will ultimately bring the learning goals (and examinations) of all three more in line with one another.

- APUS History is first up, and is in the first year of the redesigned curriculum and new exam.
- AP European History is next year.
- AP World will follow in 2016-2017 (the curriculum changes in AP World happened a couple of years ago, but the exam will be changing two years from now).
- Teachers from WHS have been involved in the redesign process for all three courses.

Implemented preliminary summer coursework for students who were not recommended for APUS History (an on-ramp course).

- Of 22 students who requested overrides, 17 took and passed the online module.

## **Summer Workshops**

Of the many courses/workshops offered this summer, here are a few highlights of the curriculum and programmatic work addressed:

Developing and enhancing Common assessments and District Determined Measures  
Refining special education Progress Monitoring, Delivery, Program structure  
Planning Language Based Classroom  
Building co-teaching model  
Creating and developing new units  
Flipping the classroom/creating hybrid learning experiences  
Developing opinion writing  
Aligning to the Common Core (Mass Frameworks)  
Refining Guided Reading  
Integrating online textbooks and assessments  
Enhancing the spiral science curriculum  
Developing edX onramp courses  
Planning for Instructional Support Teams  
Creating student design challenges  
Preparing for new Massachusetts science standards  
Understanding and planning for course redesign: AP United States History  
Integrating Facing History and Ourselves  
Enhancing teaching of phonemic and phonological awareness in kindergarten  
Mapping ELL curriculum

## **Next Steps**

The Superintendent's next 5 year plan is deeply focused on teaching and learning. Curriculum leaders and faculty are committed to providing meaningful learning experiences in the Weston Public Schools.