Farnsworth Middle School

Eighth Grade Accelerated Algebra I and Living Environment (Regents Biology)

May 25, 2016
Our Programs

- Aligned with all New York State Education Department regulations for Regents level math and science courses
- Two of three courses offered at FMS for which students can earn high school credit
- Maintains middle-level philosophy and practices while meeting all requirements for high school math and science courses
- Opportunity for interested and qualified students to pursue math and science beyond the eighth grade curriculum
NYS Regulations for Acceleration in grades 6-8

• “Public school students in grade eight shall have the opportunity to take high school courses in mathematics and in at least one of the following areas: English, social studies, languages other than English, art, music, career and technical education subjects or science courses.”

• Accelerated students in Guilderland are required to participate in all Intermediate Level NYS Assessments administered to eighth grade students
Criteria for Acceleration in Mathematics

- Seventh Grade Skills Assessments
- Quarterly Grades
- 7th Grade Midterm Exam
- Teacher Recommendation
<table>
<thead>
<tr>
<th>Perseverance</th>
<th>Reason Abstractly</th>
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<tbody>
<tr>
<td>attempts different strategies to unique situations</td>
<td>links concepts</td>
</tr>
<tr>
<td>accesses resource without prompting</td>
<td>connects basic mathematical principals</td>
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<tr>
<td>attempts problems multiple times before seeking out adult support</td>
<td>demonstrates ability to recognize incorrect mathematical processes or exceptions to a rule</td>
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<tr>
<td>attempts to do best work</td>
<td>able to access if an answer is reasonable for the question</td>
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<tr>
<td>takes advantage of opportunities to extend learning</td>
<td>demonstrates ability to convert quantities into different equivalent representations</td>
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<tr>
<td>completes work in a timely manner</td>
<td>able to identify required processes to word problems or real-life problems.</td>
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<td>accepts constructive criticism and makes adjustments to work</td>
<td>able to identify variables that would cause answers to deviate from expected results</td>
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<tr>
<td>follows directions independently</td>
<td>questions reflect the “why” or “what if” of mathematics rather than the “what” or “how”</td>
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<tr>
<td>work consistently demonstrates the desire to understand a concept rather than to just finish an assignment</td>
<td>able to adjust theories based on mathematical evidence (such as exceptions to the rule or the need to limit certain mathematical principals)</td>
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<tr>
<td>able to learn from mistakes and change behavior based on experience</td>
<td></td>
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<tr>
<td>has good attendance</td>
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<table>
<thead>
<tr>
<th>Construct Viable Arguments</th>
<th>Precision</th>
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<tbody>
<tr>
<td>can solve a problem in more than one way</td>
<td>demonstrates fluency with operations of fractions, decimals, and percents</td>
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<tr>
<td>can justify problem solving techniques both mathematically and in written language</td>
<td>demonstrates fluency with integers</td>
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<tr>
<td>able to listen and discuss differing points of view</td>
<td>checks over work and answers for completeness and accuracy on a regular basis</td>
</tr>
<tr>
<td>uses correct mathematical vocabulary in appropriate situations</td>
<td>uses correct mathematical procedures and demonstrates ability to show work in solving problems</td>
</tr>
</tbody>
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| Precision                                                                    |                                                                                  |
|----------------------------------------------------------------------------|                                                                                  |
| demonstrates fluency with operations of fractions, decimals, and percents  |                                                                                  |
| demonstrates fluency with integers                                         |                                                                                  |
| checks over work and answers for completeness and accuracy on a regular basis |                                                                                  |
| uses correct mathematical procedures and demonstrates ability to show work in solving problems |                                                                                  |
| uses correct mathematical symbolism                                        |                                                                                  |
| able to complete work efficiently and effectively with little adult prompting or support |                                                                                  |
| demonstrates fluency and strong understanding of algebraic processes       |                                                                                  |
Criteria for Science Acceleration at Farnsworth Middle School

- Parallel Acceleration in Mathematics
- Quarterly Grades
- Lab proficiency
- Teacher Recommendation
Regents Algebra

• First course in the Regents mathematics sequence
• One year course
• Regents exam administered in June of each year
• Students will not take Math 8
• Scheduled within the team rotation of classes
• Students need TI-84+ Graphing Calculator
Topics of Study Common Core Algebra

I. Seeing Structure in Expressions
   a) Interpret the structure of expressions
   b) Write expressions in equivalent forms to solve problems

II. Arithmetic with Polynomials and Rational Functions
   a) Perform arithmetic operations on polynomials
   b) Understand the relationship between zeros and factors of polynomials
   c) Use polynomial identities to solve problems
   d) Rewrite rational functions

III. Creating Equations
   a) Create equations that describe numbers or relationships

IV. Reasoning with Equations and Inequalities
   a) Understand solving equations as a process of reasoning and explain the reasoning
   b) Solve equations and inequalities in one variable
   c) Solve systems of equations
   d) Represent and solve equations and inequalities graphically

http://www.corestandards.org/Math/Content/HSA/introduction/
Common Core Algebra Regents Exam

- Administered in June 2017
- Score reflected on high school transcript
- Multiple Choice, constructed-response and extended-response questions
The program objective:

• To prepare students for successful acceleration by:
  o Providing instruction and independent study of prerequisite topics
  o Addressing instructional time limitations
The Summer Bridge Program will consist of independent study work to be completed by June 15. Students are given an opportunity to self evaluate their work and meet independently with their teachers.

In addition students will complete an online independent study of additional 8th grade topics through an online course over the Summer.
Regents Algebra I
The pace will become much quicker!!
Testing
New York State Tests:

• Math Assessment (3 half days) if not exempt next year
• ELA Assessment (3 half days)
• Algebra Regents
• Living Environment Regents Exam
Middle School Activities
Tutorial Time
Words to become familiar with...
HELP!
Important

These children are still MIDDLE SCHOOLERS (with the responsibility of a HS student)
Regents Biology/Living Environment

- Additional offering for qualified students
- Living Environment is offered in place of 8th grade Science and offered within their school day.
- Curriculum aligns with much of the existing 8th grade curriculum. Students will be prepared for both the NYS 8th grade Science Test and the Living Environment Regents however students will participate in only the Regents Assessment.
For admission to a Regents examination in science, a student must meet the NYS mandated requirements for:

- **Classroom instruction**—Currently, 180 minutes of instruction per week are required for all Regents science courses.

- **Laboratory Investigations**—Currently, an additional 1200 minutes per year of hands-on laboratory activities with satisfactory laboratory reports are required.
Required Skills and Proficiencies

It is assumed that students beginning the course can already:

- Read and comprehend at or above the 9th grade level
- Use formulas to solve mathematical problems
- Work with scientific notation
- Read and interpret graphs
- Interpret information from charts and diagrams
- Write quality lab reports with correct grammar and proper sentence structure that follows the scientific method.
Ecology

• Ecosystems and the interconnectedness in Communities
• Energy Flow through Ecosystems
• Relationships between Biotic and Abiotic factors
• Symbiotic relationships
• Cycling of Matter
• Global Environmental issues
Cells and Biochemistry

• Cell History and development of the microscope
• Cell structure and function
• Reproduction
• Fundamental building blocks of life
• Nutrition
Genetics

- Discovery of DNA
- Mendelian Genetics
- Origins of Hereditary Science
- Probability and Pedigree Analysis
- Replication of DNA
- Protein Synthesis
- Gene Expression
- Applications of Gene Technology
Evolution

- Classification of Living Things
- Darwin and beyond
- Diversity of Life
- How living things adapt to changing environments
- Radioactive Decay and Earth Timeline
Homeostasis and the Human Body

Human body systems
Feedback Mechanisms
Homeostasis and disease
The body’s Defenses
Reproduction and Development
A lot of work. . .
but it can be done!
“HOW?”
Attendance is important
ASK FOR HELP!

DO NOT WAIT!
Living Environment Regents Exam

- Assuming all requirements for instruction and laboratory activities have been met, students will take the Regents exam in June of their 8th grade year.
- Attendance is critical!!!
The Living Environment Regents has four parts and is offered in one written test in June.

1. Parts A, B and C based on specific Living Environment content and include multiple choice, extended response and constructed response questions.

2. Part D based specifically on 4 mandated labs required by NYS Department of Education.
The entire LE Core Curriculum can be accessed at:
Enjoy YOUR world!
Frequently Asked Questions (cont.)

How do the middle school Living Environment and integrated algebra programs differ from the high school programs?

- The middle school and high school programs follow the same Core Curriculum published by NYSED.
- All requirements for instruction and lab work are the same.
- Most notable difference is the approach which models the middle school philosophy. Specifically, there may be more individual assistance, direct instruction in test-taking strategies, supplementary review, and often additional opportunities to complete assignments, labs, projects, etc.
What is the typical high school course sequence for those students who have successfully completed Integrated Algebra in eighth grade?

- Eighth Grade Regents Algebra
- Honors Geometry
- Honors Algebra II and Trigonometry
- Math 12 Honors
- BC Calculus
What is the anticipated high school course sequence for those students who have successfully completed the Living Environment in eighth grade?

- **8th grade Accelerated Science/LE**
- **Honors Earth Science**
- **Honors Chemistry**
- **Honors Physics**
- **Science Elective (AP, SUPA, etc.)**