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| Teacher: | Laurie Service | Semester: | 2014-2015 |
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 ****Integrated Math

 **Pittsfield School District Logic Model Focus Areas:**

1. Student Ownership for Learning
2. Raising Student Achievement
3. Developing 21st Century Skills, Civic Responsibility, and Social-Emotional Learning
4. Redefining Adult Roles and Performance Expectations
5. Engaging with the Community

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| **Course Description:** Integrated math follows completion of 8th grade mathematics or Pre-Algebra. This course is a combination of classroom support and online assignments and tests which you are responsible for completing on time. The use of your iPad is required for this course. This course used the Integrated CME Project Mathematics curriculum. This curriculum is a problem-based, student-centered program created to help students acquire a deep understanding of mathematics. The curriculum is rigorous and challenging, designed to engage students of all abilities and to improve student’s mathematical achievement. Students will develop Habits of Mind (ways in which students approach and solve mathematical challenges), engage in many different activities, projects, inquiry, investigation reflection, discussion and extensive practice in order to help develop a deep understanding of the material. This program provides the time and focus needed to develop fundamental mathematical ways of thinking. This course incorporates both Algebra and Geometry and will take at least two years to complete all competencies. |
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| **Expectations:****What you can expect from me:**I am committed to your success in this course, and will challenge you to develop your skills and your confidence as a mathematical thinker. I will communicate clearly about math and about my expectations and deadlines. I will coach and guide you as you work through the materials individually and as a group. I will help you to organize your notes and class materials so that you are able to remember what you learned in class and refer to those materials when you are working at home. I am available to you outside of class after school Monday through Thursday until 3:50. I am also available by appointment. You can reach me by email: lservice@pittsfieldnhschools.org. If you send me an email in the evening I will most likely see it the next morning. If you are putting in the time and effort consistently I will make additional time for you including nights and weekends. If you however come for help after school on the eve of a test or project deadline do not expect me to drop everything and put your needs ahead of others who have been consistently coming in for help. **What I expect from you:**You will be responsible for obtaining and completing assignments (this includes days you are absent) on time. You will bring your iPad to class daily. You will ask questions when you do not understand the material. You will use the resources provided for you. You will put in the time and effort to practice the materials until you have mastered them. You will seek out additional assistance when needed. You will be responsible creating and completing any competency recovery plans if needed.**In Class Expectations:**1. Follow all school rules, policies, and norms – CELL PHONES are **collected** at the beginning of class and returned at the bell.
2. Be prepared--bring necessary materials (see list at end of syllabus).
3. Stay on task.
4. Keep all hands, feet, and objects to yourself.
5. Raise your hand to speak or to leave your seat.
6. Do not distract or interfere with other learner’s learning
7. Mistakes are expected (have you noticed the erasers are all worn off?) DO NOT laugh at other’s mistakes.
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| **Course Competencies** | **Performance Indicators** |
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| **Unit 1 – Arithmetic to Algebra**Students will understand that numbers, operations, and arithmetic are the building blocks of mathematical concepts that are applied to science, technology, and real-world problem solving situations. | * I can simplify numeric and algebraic expressions using appropriate properties and operations.
* I can explain the process and reasoning behind my solutions for mathematical problems.
* I can apply the concepts of rates and ratios to demonstrate the relationships between numbers and their units.
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| **Unit 2 – Expressions and Equations**Students will understand that numbers, operations, and arithmetic are the building blocks of mathematical concepts that are applied to science, technology, and real-world problem solving situations. | * I can identify and manipulate formulas to find missing quantities.
* I can translate problem solving situations into algebraic expressions and formulas.
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| **Unit 3 – Graphs**Students will understand that linear equations are used to represent, identify, extend, and generalize a variety of patterns that can be applied across content areas and used to describe real world phenomena.  | * I can recognize and model linear relationships using a variety of notations and displays.
* I can solve problems involving algebraic expressions.
* I can perform mathematical computations on and off the coordinate grid.
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|  **Unit 4 – Lines**Students will understand that inequalities represent a data set for problems that contain more than one solution. For example; price ranges, boundaries, distances. | * I can model and solve systems of equations and inequalities with one variable.
* I can model and solve systems of equations and inequalities with two variables.
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| **Unit 5 – Exponents and Functions**Students will understand that the concepts of functions and relations model relationships between two quantities that can be used to identify, extend, and generalize a variety of patterns that can be applied across content areas and used to describe real world phenomena. | * I can demonstrate an understanding of the usage of functions and function notation.
* I can apply basic operations to monomials and polynomials
* I can factor monomials and polynomials
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| **Unit 6 – Statistics and Fitting Lines**Students will understand that interpreting, analyzing, and organizing data through the use of various representations will allow them to formulate or justify conclusions, to make predictions, and to solve problems. | * I can summarize, represent and interpret data using a variety of modes
* I can determine measures of central tendency
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| **Unit 7 – Introduction to Geometry**Students will understand that the basic properties, classifications and relationships contained within polygons circles, and solids can be applied to model and solve problems involving various geometric scenarios. (Involving similarity, proportion, special triangles, and circles.) | * I can apply theorems, postulates and formulas to solve problems involving quadrilaterals and circles.
* I can apply properties of quadrilaterals and circles to determine missing values.
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| **Unit 8 – Congruence and Transformation**Students will understand that concepts of congruency and similarities are used to show relationships between geometric figures, including transformations, on and off the geometric plane. | * I can demonstrate and apply knowledge of transformations of mappings; reflections, translations, rotations and dilations.
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| **YEAR TWO** | **GEOMETRY** |
| **Unit 1 – Reasoning and Proof**Students understand that the basics of Geometry is created by building a system of definitions, postulates and theorems in order to describe, represent, and communicate various geometric relationships, patterns, and scenarios. | * I can develop and use proofs, models, tables, graphs and sequences to solve a variety of geometric problems.
* I can demonstrate the ability to construct geometric figures with a straight edge and compass.
* I can demonstrate the ability to apply postulates, theorems and formulas to solve problems.
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| **Unit 2 – Congruence and Similarity of Geometric Figures**Students will understand that it is necessary to identify, interpret, and apply the appropriate tools and techniques to determine properties and measurements of geometric figures to model and solve problems. | * I can apply theorems, postulates, and formulas to determine missing measurements of triangles and other geometric shapes.
* I can demonstrate the ability to find proportional relationships between similar figures.
* I can accurately apply properties of equilateral and isosceles triangles to find missing measurements.
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| **Unit 3 – Polygons (Area and Volume)**Students will understand that basic properties, classifications, and relationships contained within polygons, circles and solids can be applied to model and solve problems involving various geometric scenarios (involving areas of polygons, surface are and | * I can apply theorems and formulas to determine area and volume of three dimensional figures and find their missing parts.
* I can recognize and classify a solid based on its properties and identify its key characteristics.
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| **Unit 4 – Probability**Students will understand that using counting techniques with experimental or theoretical probability will allow them to make educated predictions across curriculum strands and in real world situations. | * I can use fundamental counting principle, permutations, and combinations to determine the likelihood of an event.
* I can calculate experimental and theoretical probability.
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\*\*Competencies may be subject to re-evaluation and change

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| **Course Evaluation/Assessment Calculation** 1. Mastery of all course competencies shall be the basis for awarding course credit.
2. For all courses, summative assessments are worth at least 80% and formative assessments are worth at most 20% toward determining the score for each competency.
3. Only when a student has mastered all course competencies will the final course score be calculated by averaging the individual course competencies.
4. Rolling progress reports are issued approximately every nine (9) weeks.
5. Students are encouraged to recover missed competencies throughout the course and not wait until the end of a course/course failure.
6. The transcript will report only final course scores. Upon request for a transcript, a copy of the most recent rolling progress report will be used.
7. Traditional extra credit is not an appropriate measure of student learning and will not be assigned or included in score calculation.
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| **Missing/Late Work Policy** |
| Missing and/or late work is defined as: When a student is not absent from class due to illness or other excused absence and does not hand in an assessment by the established due date, the work is considered missing or late. Students are highly encouraged to meet with their teachers before assessments are due to get assistance.1. If an assessment or project is not completed by the established due date, the student will earn an NE/0 as entered into Power School on that day.
2. Within a week, the student will need to arrange a meeting with the teacher to establish a new assessment plan (ex: same assessment with new time line, further formative assessments, redesigned summative, etc).
3. This new assessment plan is time-bound and the grade will remain an NE/0 unless the plan is completed by the mutually agreed upon due date.
4. All missing formative/summative assessments can only receive a 3. Because of the additional time students are receiving, a teacher can require additional work for the assessment to earn a 4.
5. All missing / late work cannot be reassessed because the new assessment plan and additional time takes the place of a reassessment opportunity.

**Reassessment Opportunity**A reassessment opportunity is available for students who want to improve their scores and handed in the assessment by the established due date. It is expected that if a student earned less than a 2.5 they will take advantage of the reassessment opportunity.1. The student must meet with the teacher within one week of receiving the scored work to create a reassessment plan.
2. The reassessment plan must be completed by the mutually agreed upon due date or the original score stands.
3. If the reassessment plan is completed on time and the score earned is between 2.5 and 4, the new score replaces the old score.
4. A reassessment score should never result in a lower score.
5. Reassessment plans are available for formative assessments at the teacher’s discretion.
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| **Materials Needed:****iPad****Free TI-83 graphing calculator app****Notebook****Binder 1 inch or 1 ½ inch (three ring and pockets)****Pencil** |
| ***Please sign and return this form by September 5, 2014*** |
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As signified by our signatures, we have received and read this course outline.

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| Student Signature | Date |
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| Parent/Guardian Signature | Date |