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**Integrated Honors Math 2**

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**Course Description:**

Integrated Math 2 is the second class of a high school mathematics sequence. The courses are designed to build upon each other, increasing in difficulty and application of patterns, modeling and conjectures to develop a student’s understanding and competency in mathematics.

Students will be assessed throughout the school year. Released SAT exams will be used along with Exact Path Assessment. The tests are designed to measure student progress and identify specific strengths and needs. Assessments will ultimately drive the instruction.

2 days – SAT Pretest – First week of School

2 days – 1st Exact Path Assessment – August -September

2 days – 2nd Exact Path Assessment – TBA

2 days – 3rd Exact Path Assessment – TBA

2 days – SAT Posttest – TBA

**Attendance:**

Regular attendance is essential to excel in this class. Students who are absent will be allowed to complete make-up work; however, it is important to remember that frequent absences will result in missing essential instruction, making the completion of the assignment more difficult.

Grading Scale:

90-100% = A

80-89% = B

70-79% = C

60-69% = D

59% or below = F

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| Week(s) | Unit | Standard | Method(s)/*Activities* |
| 1 | Function Families | For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of quantities – **M.2HS.7**  Graph functions expressed symbolically and show key features of the graph – **M.2HS.10**  Compare properties of two functions each represented in a different way – **M.2HS.12** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program   *A Picture is worth a thousand words Activity*  *A Sort of Sorts Activity* |
| 1 | Solving Linear Equations and Inequalities | N/A | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum |
| 2 | Linear/Linear Piecewise | Write a function that describes a relationship between two quantities **– M.2HS.13**  Create equations and inequalities in one variable and use them to solve problems – **M.2HS.20** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum   *CBR Lessons* |
| 4 | Linear Topics (Slope, Slope-Intercept Form, Parallel and Perpendicular Lines, Deriving Linear Equations ) | Calculate and interpret the average rate of change of a function – **M.2HS.9**  Graph functions expressed symbolically and show key features of the graph – **M.2HS.10**  Create equations and inequalities in one variable and use them to solve problems – **M.2HS.20**  Create equations in two or more variables to represent between quantities – **M.2HS.21** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum   *Linear Equation Project and Presentation* |
| 1 | Literal Equations | Rearrange formulas to highlight a quantity of interest – **M.2HS.22** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum |
| 2-3 | Linear Regression | **M.2HS.9, M.2HS.10, M.2HS.21** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum   *Monopoly Activity*  *Penny/Spaghetti Activity*  *Bungee Jump Activity* |
| 2-3 | System of Equations | **M.2HS.9, M.2HS.10, M.2HS.21** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum   *SAT Problems* |
| 1-2 | Exponents | Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values **– M.2HS.1**  Rewrite expressions involving radicals and rational exponents using the properties of exponents **– M.2HS.2** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum   *Discovery of Rules Activity* |
| 2-3 | Polynomials | Understand that polynomials form a analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials – **M.2HS.6** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum |
| 2-3 | Graphing Quadratics | **M.2HS.7, M.2HS.10, M.2HS.12**  Relate the domain of a function to its graph **-M.2HS.8** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum |
| 2-3 | Factoring Quadratics | Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function – **M.2HS.11** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum |
| 2-3 | Quadratic Formula | Solve quadratic equations in one variable using the quadratic formula – **M.2HS.23** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum |
| 2 | Complex Numbers | 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 – **M.2HS.4**  Add, subtract, and multiply complex numbers – **M.2HS.6** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum |
| 2-3 | Right Triangle Trig | Use right triangle tri and Pythagorean Theorem to find missing sides and angles – **M.2HS.50** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum   *SAT Problems* |
| 2 | Quadratic Formula with Complex Solutions | Solve quadratic equations with real coefficients that have complex solutions – **M.2HS.24** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum |
| 2 | Functions/Inverse Functions | Identify the effect on the graph of replacing f(x) by f(x) with a transformation – **M.2HS.14**  Find inverse functions – M.2HS.15 | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum |
| 1 | Circles | Derive the equation of a circle given center and radius using the Pythagorean Theorem – **M.2HS.57** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum   *Circle FAL Activity* |
| 3-4 | Probability | Describe events as subsets of a sample using characteristics of the outcomes as unions and intersections – **M.2HS.28**  Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities and use the characterization to determine if they are independent – **M.2HS.29**  Construct two-way tables of data when two categories are associated with each object being classified **– M.2HS.31** | * Bell Ringers * Lecture * Vertical Whiteboards * Khan Academy * Desmos Program * Teacher Made Lessons * HMH Curriculum |