**Math 1201**

**Year Plan**

**Mealy Mountain Collegiate**

**2011-2012**

**Text: Foundations and Pre-calculus**

 **Mathematics 10 (Pearson)**

**Math 1201 Math** **Time line**

**Chapter** **Percent Time Target Date**

* **1- Measurement 14%** 15 hoursEarly Oct
* **2**- **Trigonometry 12%** 13 hours Early Nov
* **4- Roots & Powers (& 3.1-3.2) 20%** 23 hours Early Jan
* **3 – Factors & Products (3.3-3.8) 20%** 23 hours Mid Mar
* **5- Relations & Functions 12%**  14 hours Mid Apr
* **6 – Linear Functions**  **12%** 14 hours Mid May
* **7 –Systems of Linear Equations**  **10%**  11 hours Early June

**Evaluation**

Review Assignments/Worksheets/Other 15%

Quizzes 5 %

Tests 25%

Homework 5%

Midterm Exam 20%

Final Exam  30%

**Notes**

* Materials required for class are: Math text, binder, exercise for notes and workings, graph paper, pencil, scientific calculator, scissors, glue stick, ruler, protractor and compass.
* Homework is a necessary aspect of Math class as students must practice the skills taught in class. K12 Planet will be updated on a regular basis. Any student having difficulty should seek extra help.
* Assignments will be given throughout each unit which will review the concepts taught in the unit. These assignments must be completed in pencil. Students should always present their best work. Workings and neatness is important. Assignments must be completed on time.
* Quizzes will be given weekly, depending on class schedules. These quizzes will take place during the first 10-15 minutes of class. Each unit will also have at least one unit test.
* Students and Parents should not hesitate to contact us as soon as they have a concern. Communication is the key. It helps keep the small problems from becoming big ones.
* Students are expected to come to class prepared, respect others and always give their best.

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| **Unit 1 Measurement – 15 hours (14%)** |
| **Section** | **Text****Pages** | **Work****Book** | **Involves** | **Date** |
| 1.1 | 4-12 | 1-8 | * **Imperial Measures of Length**
* Students will develop personal referents to estimate imperial measures of length
* Students will use proportions to convert between imperial units.
 |  |
| 1.2 | 13-15 | 9-11 | * **Measuring Length and Distance**
* Students will use measuring instruments and personal measures to determine linear measurements using both imperial and SI systems
 |  |
| 1.3  | 16-23 | 12-18 | * **Relating SI and Imperial Units**
* Students will convert measurements between SI units and Imperial units.
 |  |
| CP1 | 24-25 | 19-21 | * Reviews Sections 1.1-1.3
 |  |
| 1.4 | 26-35 | 22-30 | * **Surface Area of Right Pyramids and Right Cones**
* Students will develop and apply formulas for the surface areas of right pyramids and right cones.
* Students will determine an unknown dimension given the surface area of a right cone or pyramid, and other sufficient information.
 |  |
| 1.5 | 36-44 | 31-39 | * **Volumes of Right Pyramids and Right Cones**
* Students will examine the relationship between a right cone and cylinder with equal bases and heights, as well as right prisms and pyramids.
* Students will develop and apply formulas for the volumes of right pyramids and right cones.
* Students will determine an unknown dimension given the volume of a right cone or pyramid, and other sufficient information.
 |  |
| 1.6 | 45-52 | 40-45 | * **Surface area and Volume of Sphere**
* Students will develop and apply formulas for the surface areas and volume of a sphere.
* Students will determine an unknown dimension given the volume or surface area of a sphere, and other sufficient information.
 |  |
| CP2 | 53-54 | 46-49 | * Reviews sections 1.4-1.6
 |  |
| 1.7 | 55-61 | 50-58 | * **Solving Problems Involving Objects**
* Students will solve problems involving the surface area and volume of composite shapes.
 |  |
| Review | 62-67 | 59-66 | * Reviews concepts taught in the unit
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**Target Completion Date: Early Oct**

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| **Unit 2 Trigonometry -13 hours (12%)** |
| **Section** | **Text****Pages** | **Work****Book** | **Involves** | **Date** |
| 2.1 | 70-77 | 67-74 | * **The Tangent Ratio**
* Students will apply knowledge of similar triangles to develop the tangent ratio
* Students will use the tangent ratio to determine an acute angle in a right triangle when you know the length of the legs.
 |  |
| 2.2 | 78-83 | 75-83 | * **Using the Tangent Ratio to Calculate Lengths**
* Students will use the tangent ratio to determine the length of a leg in a right triangle given and acute angle and the other leg.
 |  |
| 2.3 | 84-86 | 84-86 | * **Measuring inaccessible Heights**
* Students will make and use clinometers to apply the tangent ratio to real-world measurements
 |  |
| CP1 | 87-88 | 87-88 | * Reviews Sections 2.1-2.3
 |  |
| 2.4 | 89-96 | 89-96 | * **The Sine and Cosine Ratios**
* Students will apply knowledge of similar triangles to develop the sine and cosine ratios
* Students will use the sine or cosine ratios to determine an acute angle in a right triangle when you know the length of one the legs and the hypotenuse.
 |  |
| 2.5 | 97-102 | 97-105 | * **Using the Sine and Cosine Ratios to Calculate Lengths**
* Students will use the sine and cosine ratios to determine lengths indirectly.
 |  |
| CP2 | 103-104 | 106-107 | * Reviews Sections 2.4-2.5
 |  |
| 2.6 | 105-112 | 108-116 | * **Applying the Trigonometric Ratios**
* Students will use a primary trigonometric ratio to solve a problem modeled by a right triangle.
 |  |
| 2.7 | 113-121 | 117-125 | * **Solving Problems involving more than one Right Triangle**
* Students will use trigonometry to solve problems modeled by more than one right triangle.
 |  |
| Review | 122-129 | 126-132 | * Reviews concepts taught in the unit
 |  |
| Cum Review | 130-131 |  | * Reviews units 1-2
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**Target Completion Date: Early Nov**

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| **Unit 4 Powers & Roots - 23 hours (20%)** |
| **Section** | **Text****Pages** | **Work****Book** | **Involves** | **Date** |
| 4.1 | 204-206 | 201-205 | * **Math Lab: Estimating Roots**
* Students will determine the decimal approximation of square roots, cube roots and fourth roots.
* Students will realize that some radicals can be expressed as rational numbers and some cannot.
 |  |
| 4.2 | 207-212 | 206-210 | * **Irrational Numbers**
* Students will identify and order radicals that are rational numbers.
 |  |
| 4.3 | 213-219 | 211-216 | * **Mixed and Entire Radicals**
* Students will define mixed and entire radicals.
* Students will write entire radicals as mixed radicals and vice versa.
 |  |
| CP1 | 220-221 | 217-218 | * Reviews Sections 4.1-4.3
 |  |
| 4.4 | 222-228 | 219-223 | * **Fractional Exponents and Radicals**
* Students will use a fractional exponent to represent a radical.
 |  |
| 4.5 | 229-234 | 224-229 | * **Negative Exponents and Reciprocals**
* Students will use patterns to explain the meaning of a negative exponent.
* Students will relate negative exponents and reciprocals
 |  |
| CP2 | 235-236 | 230-231 | * Review Sections 4.4-4.5
 |  |
| 4.6 | 237-243 | 232-242 | * **Applying the Exponent Laws**
* Students will apply exponent laws to simplify expressions with rational and variable bases and rational exponents.
* Exponent laws will include:

1) Product of Powers2)Quotient of Powers3) Power of Power4) Power of Products5)Power of Quotients |  |
| Review | 244-251 | 243-248 | * Reviews concepts taught in the unit
 |  |
| Cum Review | 252-253 |  | * Reviews Chapters 1-4
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**Target Completion Date: Early Jan**

**Note:** Complete Sections 3.1 & 3.2 before you start this unit.

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| **Unit 3 Factors & Products – 23 hours (20%)** |
| **Section** | **Text****Pages** | **Work****Book** | **Involves** | **Date** |
| 3.1 | 134-141 | 133-141 | * **Factors and Multiples of Whole Numbers**
* Students will determine the prime factors, greatest common factors and least common multiples of whole numbers.
 |  |
| 3.2 | 142-147 | 142-147 | * **Perfect Squares, Perfect Cubes and Their Roots**
* Students will identify perfect squares and perfect cubes and determine square roots and cube roots.
 |  |
| CP1 | 148-149 | 148-149 | * Reviews Sections 3.1 & 3.2
 |  |
| 3.3 | 150-156 | 150-161 | * **Common Factors of a Polynomial**
* Students will apply the area model for the product of whole numbers to develop models and strategies to determine common factors in terms of a polynomial.
 |  |
| 3.4 | 157-158 | 162-165 | * **Math Lab: Modelling Trinomials as Binomial Factors**
* Students will use algebra tiles to multiply and factor binomial.
 |  |
| 3.5 | 159-167 | 166-174 | * **Polynomials of Form**
* Students will use models and algebraic strategies to multiply binomials and factor trinomials of form
 |  |
| 3.6 | 168-178 | 175-184 | * **Polynomials of Form**
* Students will use models and algebraic strategies to multiply binomials and factor trinomials of form
 |  |
| CP2 | 179-181 | 185-186 | * Reviews Sections 3.3-3.6
 |  |
| 3.7 | 182-187 | 187-190 | * **Multiplying Polynomials**
* Students will extend the strategies for multiplying binomials to multiplying polynomials.
 |  |
| 3.8 | 188-195 | 191-193 | * **Factoring Special Polynomials**
* Students will factor perfect square trinomials, difference of squares and trinomials with two variables.
 |  |
| Review | 196-201 | 194-200 | * Reviews concepts taught in the unit.
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**Target Completion Date: Mid Mar**

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| **Unit 5 Relations & Functions – 14 hours (12%)** |
| **Section** | **Text****Pages** | **Work****Book** | **Involves** | **Date** |
| 5.1 | 256-263 | 249-256 | * **Representing** **Relations**
* Students will represent a relation in a variety of ways including words, a set of ordered pairs, an arrow diagram, a table of values and a graph.
 |  |
| 5.2 | 267-273 | 257-264 | * **Properties of Functions**
* Students will develop an understanding of functions.
* Students will continue to use the concepts domain & range and independent & dependent variables.
 |  |
| CP1 | 274-275 | 265-267 | * Reviews Sections 5.1 & 5.2
 |  |
| 5.3 | 276-283 | 268-274 | * **Interpreting and Sketching Graphs**
* Students will describe a situation for a given graphand vice versa.
 |  |
| 5.4 | 284-286 | 275-278 | * **Math Lab: Graphing Data**
* Students will graph data and investigate the domain and range when the data represent a function.
 |  |
| 5.5 | 287-297 | 279-286 | * **Graphs of Relations &Functions**
* Students will determine the properties of graphs of relations and functions.
* Students will determine if a graph is a function using the vertical line test.
* Students will identify the domain and range of a relation.
 |  |
| CP2 | 298-299 | 287-289 | * Reviews Sections 5.3 -5.5
 |  |
| 5.6 | 300-310 | 290-298 | * **Properties of Linear Relations**
* Students will identify and represent a linear relation is different ways including a graph, table of values and an equation.
 |  |
| 5.7 | 311-323 | 299-305 | * **Interpreting Graphs of Linear Functions**
* Students will use intercepts, rate of change, domain and range to describe the graph of a linear function.
 |  |
| Review | 324-329 | 306-312 | * Reviews concepts taught in the unit.
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**Target Completion Date: Mid Apr**

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| **Unit 6 Linear Funtions -14 hours (12%)** |
| **Section** | **Text****Pages** | **Work****Book** | **Involves** | **Date** |
| 6.1 | 332-343 | 313-323 | * **Slope of a Line**
* Students will connect the rate of change and slope .
* Students will determine the slope of a line and a line segment, including horizontal, vertical and oblique lines.
* Students will draw a line given its slope
 |  |
| 6.2 | 344-351 | 324-332 | * **Slopes of parallel and perpendicular lines**
* Students will use slope to determine if two lines are parallel or perpendicular to each other.
 |  |
| CP1 | 352-353 | 333-334 | * Reviews sections 6.1-6.2
 |  |
| 6.3 | 354-356 | 335-339 | * **Math Lab: Investigating Graphs of Linear Functions**
* Students will explore how changes in *m* and *b* in the equation *y = mx + b* affect the graph of a function.
 |  |
| 6.4 | 357-364 | 340-345 | * **Slope-Intercept Form of the Equation for a Linear Function**
* Students will relate the graph of a line to its equation in slope-intercept form.
* Students will graph a linear function given its equation in slope-intercept form and vice versa.
 |  |
| 6.5 | 365-374 | 346-354 | * **Slope-Point form of the Equation for a Linear Function**
* Students will relate the graph of a line to its equation in slope-point form.
* Students will write the equation of a line given the slope and a point, or given two points on the line.
* Students will change a linear equation in slope intercept form to slope point form and vice versa.
 |  |
| CP2 | 375-376 | 355-357 | * Reviews Sections 6.3-6.5
 |  |
| 6.6 | 377-385 | 358-365 | * **General Form of the equation for a Linear Relation**
* Students will relate the graph of a linear function to its equation in general form.
* Students will change a linear equation to the various forms…slope-intercept, slope-point and general form.
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| Review | 386-391 | 366-372 | * Reviews concepts taught in the unit.
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**Target Completion Date: Mid May**

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| **Unit 7 Systems of Linear Equations – 11 hours (10%)** |
| **Section** | **Text****Pages** | **Work****Book** | **Involves** | **Date** |
| 7.1 | 394-402 | 373-382 | * **Developing Systems of Linear Equations**
* Students will model a situation using a system of linear equations.
 |  |
| 7.2 | 403-410 | 383-390 | * **Solving a System of Linear Equations Graphically**
* Students will use the graphs of the equations of a linear system on grids to estimate a solution.
 |  |
| 7.3 | 411-413 | 391-395 | * **Math Lab: Using Graphing Technology to Solve a System of Linear Equations**
* Students will use graphing technology to determine and verify the solution of a linear system.
 |  |
| CP1 | 414-415 | 396-399 | * Reviews Sections 7.1-7.3
 |  |
| 7.4 | 416-427 | 400-406 | * **Using a Substitution Strategy to Solve a System of Linear Equations**
* Students will use substitution to solve a System of Equations.
 |  |
| 7.5 | 428-439 | 407-415 | * **Using an Elimination Strategy to Solve a System of Linear Equations**
* Students will use elimination to solve a System of Equations.
 |  |
| CP2 | 440-441 | 416-419 | * Reviews Sections 7.4-7.5
 |  |
| 7.6 | 442-449 | 420-424 | * **Properties of Systems of Linear Equations**
* Students will determine if a system of equations has no solution, one solution or an infinite number of solutions
 |  |
| Review | 450-457 | 425-430 | * Reviews concepts taught in the unit.
 |  |
| Cum Review |  |  | * Reviews Chapters 1-7
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**Target Completion Date: Early June**