Integrated Math 10*
Curriculum Outline
Course #: 31
(Special Education Replacement Class)

Number of Credits: 5 Credits
Date Updated or Revised: Updated March 2008
Prerequisites: Pass Integrated Math 9*

Course Description: Integrated Math 10* parallels the General Education Integrated Math 2 course. The curriculum and course objectives are followed; however, the student's Individualized Education Plan dictates any accommodations or instructional strategies utilized. High Point Regional High School's curriculum and instruction are aligned to the state's Core Curriculum Content Standards and address the elimination of discrimination by narrowing the achievement gap, by providing equity in the educational programs and be providing opportunities for students to interact positively with others regardless of race, creed, color, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, religion, disability, or socio-economical status.

Core Curriculum Content Standards Addressed:

4.1 A, B, C
4.2 A, B, C, E
4.3 A, B, C, D, E
4.4 A, B, C
4.5 D, E, F

Measurable Goals and Objectives:
Goal: To work with numerical data.
Objectives:
1. Describe and give information on locations of points using number lines and circular grids. (4.3 D)
2. Use ordered pairs to locate points on a coordinate grid. (4.3 B)
3. Locate positions on maps and spreadsheets using row and column coordinates. (4.5 D, F)
4. Construct and use histograms and scatter plots to solve problems. (4.4 A) (4.5 E)
5. Organize data in frequency tables to solve problems. (4.4 A)
6. Calculate and use the mean, median, and modes and range of a set of data. (4.4 A) (4.5 F)

Goal: to understand algebraic concepts.
Objectives:
1. Perform operations on real numbers. (4.1 A, B)
2. Identify rational and irrational numbers. (4.1 A, B)
3. Use the properties of exponents, including zero and negative exponents. (4.1 B)
4. Use order of operations to write and evaluate numerical and variable expressions. (4.1 B) (4.3 D)
5. Find the absolute value of a real number. (4.3 D)

Goal: To recognize and apply patterns and transformations.
Objectives:
1. Identify lines of symmetry in a figure. (4.2 A) (4.3 B)
2. Recognize designs based on tessellations. (4.2 A)
3. Graph reflection images across horizontal or vertical lines on a coordinate plane and identify lines of reflection. (4.2 B) (4.2 C)
4. Combine transformation to produce an image. (4.2 B) (4.2 C)
5. Recognize numerical (including patterns with exponents) and geometric patterns and use them to solve patterns. (4.3 A)
6. Generalize a pattern in a sequence of numbers with an algebraic expression. (4.3 D) (4.3 A)
7. Apply sequences to real life problems. (4.3 C)

Goal: To understand and apply equations.
Objective:
1. Solve one and two-step equations using the distributive property. (4.3 C)
2. Be exposed to the commutative, associative and distributive, properties. (4.3 D)
3. Be exposed to the reflexive, symmetric, and transitive properties. (4.3 D)
4. Demonstrate an understanding of percent and apply to real life problems. (4.1 A) (4.1 B)
5. Construct, read and interpret circle graphs. (4.5 E)

*   Goal: To understand spatial relations.
*   Objectives:
    1. Demonstrate knowledge of congruency and determine conditions needed for congruent triangles. (4.2 A)
    2. Demonstrate knowledge of quadrilaterals. (4.2 A)
    3. Classify polygons according to their sides and angles. (4.2 A)
    4. Demonstrate an understanding of perimeter, circumference, and area and use these to solve problems. (4.2 A) (4.2 E)
    5. Find the surface area and volume of three-dimensional objects. (4.2 E)
    6. Use rectangles to estimate the area under a curve. (4.2 E)

Unit 6: Understanding and Applying Ratios and Proportions
*   Goal: To understand and apply ratios and proportions.
*   Objectives:
    1. Write ratios and find unit rates. (4.1 A,B,C)

2. Use proportions to solve problems. (4.1 A, B, C)
3. Demonstrate an understanding of similar figures. (4.5 D)
4. Use similar triangles to find indirect measures. (4.1 B,C)
5. Be exposed to the Pythagorean Theorem. (4.2 E)
6. Be exposed to concepts of sine, cosine, and tangent. (4.2 E)

Unit 7: Understanding and Applying Probability
- Goal: To understand and apply probability
- Objectives:
  1. Demonstrate an understanding of the range of values in probability. (4.4 B,C)
  2. Use the counting principle to determine the number of outcomes: use factorial notation. (4.4 C)
  3. Determine and compare experimental and theoretical probability. (4.4 B,C)
  4. Use tree diagrams and other formats to solve problems. (4.4 B,C)
  5. Find probabilities of simple and compound events as decimals, fractions, and percents. (4.4 B,C)
  6. Use basic principles to find permutations and combinations. (4.4 B,C)

Unit 8: Graphing Functions
- Goal: To graph functions.
- Objectives:
  1. Sketch and interpret graphs representing real life situations. (4.3 B,C)
  2. Identify functions from a correspondence or table. (4.3 B,C)
  3. Identify domain and range of a function. (4.3 B)
  4. Graph an equation using slope intercept form. (4.3 B)

Implementation of Technology:
Students utilize calculators and Study Island Software Program.

Materials and Resources:
Students will be using a wide array of materials including teacher made worksheets, teacher made assessments, texts including, but not limited to *AGS Algebra, AGS Pre Algebra*, and *AGS Geometry* printed by American Guidance Service, Inc. as well as other materials deemed necessary by the instructor. Incorporated into the curriculum will be the use of newspapers, magazines, the Internet, graphs, word processing, as well as other technology deemed necessary by the instructor.

Student Evaluation Methods:
Grades will be calculated according to the grading policy and the following guidelines.
   A. Marking Period Grade
      1. Quizzes and Test 70-80%
      2. Homework and Class work 20-30%
         (Each teacher will explain his/her grading policy for homework and class work)
   B. Final Grade

1. Each Marking Period 20%
2. Midterm Exam 10%

Integrated Math 10 (Revised 3/08)
Course Outline (Including New Jersey Core Curriculum Content Standards)

Unit 1: Working with Numerical Data
- Goal: To work with numerical data.
- Objectives:
7. Describe and give information on locations of points using number lines and circular grids. (4.3 D)
8. Use ordered pairs to locate points on a coordinate grid. (4.3 B)
9. Locate positions on maps and spreadsheets using row and column coordinates. (4.5 D, F)
10. Construct and use histograms and scatter plots to solve problems. (4.4 A) (4.5 E)
11. Organize data in frequency tables to solve problems. (4.4 A)
12. Calculate and use the mean, median, and modes and range of a set of data. (4.4 A) (4.5 F)

Unit 2: Understanding Algebraic Concepts
- Goal: to understand algebraic concepts.
- Objectives:
6. Perform operations on real numbers. (4.1 A, B)
7. Identify rational and irrational numbers. (4.1 A, B)
8. Use the properties of exponents, including zero and negative exponents. (4.1 B)
9. Use order of operations to write and evaluate numerical and variable expressions. (4.1 B) (4.3 D)
10. Find the absolute value of a real number. (4.3 D)

Unit 3: Recognizing and Applying Patterns and Transformations
- Goal: To recognize and apply patterns and transformations.
- Objectives:
8. Identify lines of symmetry in a figure. (4.2 A) (4.3 B)
9. Recognize designs based on tessellations. (4.2 A)
10. Graph reflection images across horizontal or vertical lines on a coordinate plane and identify lines of reflection. (4.2 B) (4.2 C)
11. Combine transformation to produce an image. (4.2 B) (4.2 C)
12. Recognize numerical (including patterns with exponents) and geometric patterns and use them to solve patterns. (4.3 A)
13. Generalize a pattern in a sequence of numbers with an algebraic expression. (4.3 D) (4.3 A)
14. Apply sequences to real life problems. (4.3 C)

Unit 4: Understanding and Applying Equations
- Goal: To understand and apply equations.
- Objective:
6. Solve one and two-step equations using the distributive property. (4.3 C)
7. Be exposed to the commutative, associative and distributive, properties. (4.3 D)
8. Be exposed to the reflexive, symmetric, and transitive properties. (4.3 D)

9. Demonstrate an understanding of percent and apply to real life problems. (4.1 A) (4.1 B)
10. Construct, read and interpret circle graphs. (4.5 E)

Unit 5: Understanding Spatial Relations
- Goal: To understand spatial relations.
- Objectives:
  7. Demonstrate knowledge of congruency and determine conditions needed for congruent triangles. (4.2 A)
  8. Demonstrate knowledge of quadrilaterals. (4.2 A)
  9. Classify polygons according to their sides and angles. (4.2 A)
  10. Demonstrate an understanding of perimeter, circumference, and area and use these to solve problems. (4.2 A) (4.2 E)
  11. Find the surface area and volume of three-dimensional objects. (4.2 E)
  12. Use rectangles to estimate the area under a curve. (4.2 E)

Unit 6: Understanding and Applying Ratios and Proportions
- Goal: To understand and apply ratios and proportions.
- Objectives:
  7. Write ratios and find unit rates. (4.1 A,B,C)
  8. Use proportions to solve problems. (4.1 A, B, C)
  9. Demonstrate an understanding of similar figures. (4.5 D)
  10. Use similar triangles to find indirect measures. (4.1 B,C)
  11. Be exposed to the Pythagorean Theorem. (4.2 E)
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- Goal: To understand and apply probability
- Objectives:
    7. Demonstrate an understanding of the range of values in probability. (4.4 B,C)
    8. Use the counting principle to determine the number of outcomes: use factorial notation. (4.4 C)
    9. Determine and compare experimental and theoretical probability. (4.4 B,C)
    10. Use tree diagrams and other formats to solve problems. (4.4 B,C)
    11. Find probabilities of simple and compound events as decimals, fractions, and percents. (4.4 B,C)
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- Objectives:
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    7. Identify domain and range of a function. (4.3 B)
    8. Graph an equation using slope intercept form. (4.3 B)

- Note: Many of the goals and objectives are part of the Mathematical Processes standard which includes:
    A. Problem Solving
    B. Communication
    C. Connections
    D. Reasoning
    E. Representations
    F. Technology