

Curriculum Guide

Course: Mathematics I

Course number: 14.02

Written: 1/09 (D. Wilson)

Prerequisites: none

Level/credits: LLD/5 credits

Grades offered to: 9th and 10th

Course Description:

Mathematics I has been designed as a required course for the Learning and Language Disabled class. The course is designed to enable every student to develop sufficient skills in whole numbers and fractions.

High Point Regional High School's curriculum and instruction are aligned to the state's Core Curriculum 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.

Course Goals and Objectives:

Goal: To review all concepts with adding and subtracting whole numbers.

Objectives:

To read and write whole numbers through billions.

To find the sum of two or more whole numbers.

To find the difference of two whole numbers.

To translate an addition or subtraction phrase into a variable expression.

To evaluate a variable expression involving addition or subtraction

Goal: To be able to round and compare whole numbers.

Objectives:

To round a whole number to a given place.

To compare and order whole numbers.

To read and construct bar graphs.

To read and construct line graphs.

To identify missing facts in a problem and to determine if a given answer is reasonable.

To compute elapsed time.

Goal: To be able to multiply whole numbers

Objectives:

To multiply by numbers that are multiples of 10, 100, and 1000

To estimate and find the product of a number and a one-digit number.

- To estimate and find the product of a number and a two-digit number.
- To estimate and find the product of a number and a three-digit number.
- To find products using the properties of multiplication.
- To evaluate variable expressions involving multiplication.
- To find the approximate number of Calories used during a given activity.

Goal: To be able to divide whole numbers.

Objectives:

- To find the quotient when dividing by a one-digit number.
- To use compatible numbers to estimate quotients.
- To estimate and find the quotient when dividing by a two-digit number.
- To estimate and find the quotient when dividing by a three-digit number.
- To translate a multiplication or division phrase into a variable expression.
- To solve problems using a four-step method.
- To convert units of time.
- To find averages.

Goal: To be able to have an understanding of the order of operations and number theory.

Objectives:

- To use the order of operations.
- To use the divisibility test in determining if one number is divisible by another.
- To find the greatest common factor of a set of numbers.
- To find the least common multiple of a set of numbers.
- To compute with exponents.
- To evaluate variable expressions containing exponents.
- To use whole number quantities.
- To use expressions of time.

Goal: To be able to develop a basic understanding of fraction concepts.

Objectives:

- To write a fraction that represents part of a region or part of a set.
- To write a fraction equivalent to a given fraction.
- To write a fraction in lowest terms.
- To compare and order fractions.
- To change mixed numbers to fractions and mixed numbers.
- To solve problems using more than one operation.
- To use fractions to describe parts of a day.

Goal: To be able to have an understanding of multiplying and dividing fractions.

Objectives:

- To find and estimate products involving fractions.
- To estimate products involving mixed numbers.
- To find products involving mixed numbers.
- To find quotients involving fractions.
- To find and estimate quotients involving mixed numbers.

To apply fraction multiplication to recipes.

Goal: To be able to have an understanding of adding and subtracting fractions.

Objectives:

To find the sum or difference of fractions with common denominators.

To find the sum or difference of fractions with different denominators.

To find the sum of mixed numbers.

To find the difference of mixed numbers without renaming.

To find the difference of mixed numbers with renaming.

To solve a problem by identifying a number pattern.

To compute total hours worked.

CCCS Addressed:

- Standard 4.1 Number and Numerical Operations – All students will develop number sense and will perform standard numerical operations and estimations on all types of numbers in a variety of ways.
- Standard 4.2 Geometry and Measurement – All students will develop spatial sense and the ability to use geometric properties, relationships, and measurement to model, describe and analyze phenomena.
- Standard 4.5 Mathematical Processes – All students will use mathematical processes of problem solving, communication, connections, reasoning, representations, and technology to solve problems and communicate mathematical ideas.

Units: Marking Period 1

Chapter One – Adding and Subtracting Whole Numbers

Place Value

Estimating Sums

Variable Expressions

Addition and Subtraction Phrases

Time Zones

Chapter Two – Rounding and Comparing Whole Numbers

Rounding Whole Numbers

Comparing Whole Numbers

Bar Graphs

Line Graphs

Problem Solving Strategy: understanding the problem

Planning a Meal

Chapter Three – Multiplying Whole Numbers

Multiplying by Multiples of 10, 100, and 1000

Multiplying by a One-Digit Number
Multiplying by a Two-Digit Number
Multiplying by a Three-Digit Number
Variable Expressions and Multiplication

Units: Marking Period 2

Chapter Four – Dividing Whole Numbers
Dividing by a One-Digit Number
Dividing by a Two-Digit Number
Dividing by a Three-Digit Number
Variable Expressions and Division
Multiplication and Division Phrases
Problem Solving Strategy: choosing the correct operation

Chapter Six – Fraction Concepts
Writing Fractions
Equivalent Fractions
Lowest Terms
Comparing Fractions
Fractions and Mixed Numbers
Problem Solving: using more than one operation

Midterm

Units: Marking Period 3

Chapter Five – Order of Operations and Number Theory
Order of Operations
Divisibility Test
Factors and Prime Multiples
Exponents and Whole Numbers
Exponents and Variables
Using Expressions of Time

Chapter Seven – Multiplying and Dividing Fractions
Multiplying with Fractions
Multiplying with Mixed Numbers
Dividing with Fractions
Dividing with Mixed Numbers
Adjusting Recipes

Units: Marking Period 4

Chapter Eight – Adding and Subtracting Fractions
Adding and Subtracting Fractions with Common Denominators

Adding and Subtracting Fractions with Different Denominators
Adding Mixed Numbers
Subtracting Mixed Numbers without Renaming
Subtracting Mixed Numbers with Renaming
Problem Solving Strategy: identifying patterns

Chapter Nine – U.S. Customary Measurement

U.S. Customary Units of Length
Using a Customary Ruler
U.S. Customary Units of Weight
U.S. Customary Units of Capacity
Computing with Customary Units

Final Exam

Additional Materials – charts, rulers, capacity containers, practice sheets

Evaluation:

Homework based on	10 points
Class work based on	10 points
Quizzes based on	50 points
Tests based on	100 points
Notebook check	10 points

Midterm (written 2007)

Final (written 2008)

Reference: Textbook: Essentials for High School Mathematics, Houghton Mifflin Company, 1989. Blackline master worksheets, smart board calculator – Casio-*fx*65