# Refresher Math Course Guide

## OVERVIEW

This course is designed to provide you with a strong foundation in general mathematics and some basic problem solving skills. Heavy emphasis is placed on the review of previously introduced concepts and skills. The course consists of 4 Units covering:

1) Review Unit: Whole number concepts, operations, and problem solving (Satisfied by completion of PLATO FastTrack Levels B & C)
2) Unit A: Fraction concepts, operations, skills, and problem solving
3) Unit B: Decimal concepts, operations, skills, and problem solving
4) Unit C: Percent concepts, operations, skills, and problem solving (includes an introduction to proportions)

Additionally, you will have opportunities to apply the above skills to measurement and consumer problems throughout the course.

## METHODS & REQUIREMENTS

1. **Lectures, Discussions, and Demonstrations:**

   This is designed as a self-paced course, although it may be taught in a small group or classroom setting. As a result, formal group lectures, discussions, and demonstrations are not normally appropriate. However, I will discuss and demonstrate concepts, skills, and strategies, as needed. It is your responsibility to ask for help when you don't understand something.

   Many students find it helpful to have an overview discussion prior to starting new material. If you would like such an overview, see me to arrange a time when we can get together.

2. **Problem Sets:** (40% of course grade)

   Each unit will have three Problem Sets. Each set will contain questions related to both new and review topics. Problem Sets will be graded on (1) neatness and organization of solutions; and, (2) correctness of solutions and answers. Note: In order to be awarded partial credit, you must show your work in a neatly organized manner.

3. **Practice & Computer Activities:**

   Exercises from Contemporary's Number Power 2 work-text and PLATO FastTrack Levels D, E & F are optional. It is left up to you to decide how much or little of these resources you need to use.

4. **Unit Tests:** (60% of course grade)

   You are required to take a Unit Test after you have completed all of the assigned Problem Sets for that Unit. The tests are cumulative in nature with questions modeled after problems from the Problem Sets and the Unit Practice Test. Note: In order to be awarded partial credit, you must show your work in a neatly organized manner.

5. **Hours Requirement:**

   Students using this course for credit toward a high school diploma must document 45 hours of work. This is a State requirement that cannot be waived.


Outline by Robert E. Buzby, Sidney, ME

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## UNIT A: FRACTION SKILLS

**PS A1: Introduction to Fractions** (Learn about Fraction Vocabulary, Simplifying Fractions, Converting Fractions and Mixed Numbers to Equivalent Fractions and Mixed Numbers, Adding and Subtracting Fractions with Like Denominators, and Solving Addition and Subtraction Fraction Problems with Like Denominators.)

**PS A2: Add & Subtract Fractions with Unlike Denominators** (Review PSA1 skills and concepts, learn about Factoring & Divisibility Rules, Finding Common Denominators, Adding and Subtracting Fractions and Mixed Numbers with Unlike Denominators, Carrying when Adding Fractions, Borrowing when Subtracting Fractions, and Solving Addition and Subtraction Fraction Problems with Unlike Denominators.)

**PS A3: Multiply & Divide Fractions** (Review PSA1 & PSA2 skills and concepts, learn about Multiplying and Dividing Fractions and Mixed Numbers [with and without canceling], and Solving Multiplication and Division Fraction Problems.)

**Mock Test:** This activity is designed to serve as a mixed review of material covered to date. Completion of this activity is optional; however, it should prove helpful in preparing for the unit test.

**Unit Test:** (Complete all the above prior to taking the cumulative Unit Test.)

## UNIT B: DECIMALS

**PS B1: Introduction to Decimals** (Review fraction skills and concepts, learn about Decimal Place Value, Rounding, Comparing Decimals, Converting Between Fractions and Decimals, and Reading a Metric Ruler.)

**PS B2: Introduction to Decimal Operations** (Review fraction and PSB1 skills and concepts, learn about Decimal Addition, Subtraction, Multiplication, Division, and Single-Step Decimal Word Problems.)

**PS B3: Mixed Decimal Operations** (Review fraction, PSB1, and PSB2 skills and concepts, learn about the Order of Operations and Multi-Step Decimal Problems.)

**Mock Test:** This activity is designed to serve as a mixed review of material covered to date. Completion of this activity is optional; however, it should prove helpful in preparing for the unit test.

**Unit Test:** (Complete all the above prior to taking the cumulative Unit Test.)

## UNIT C: PERCENTS WITH AN INTRODUCTION TO PROPORTIONS

**PS C1: Percent Basics** (Review fraction and decimal skills and concepts, learn about Percent Definition, Fraction-Decimal-Percent Conversions, Finding Percent of a Number.)

**Supp. Introduction to Proportion Supplement** (This supplemental handout is designed to introduce you to the use of proportions to solve problems. You should find it helpful in completing Problem Set C2.)

**PS C2: Solving Percent Problems** (Review fraction, decimal, and basic percent skills and concepts, learn about Finding What Percent One Number is of another, Finding a Number When a Percent of It Is Given)

**Mock Test:** This activity is designed to serve as a mixed review of material covered to date. Completion of this activity is optional; however, it should prove helpful in preparing for the unit test.

**Unit Test:** (Complete all the above prior to taking the cumulative Unit Test.)



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