

Module 400 – Lesson One: BASIC MATH

Lesson Description:

Lesson includes working with whole numbers, fractions, decimals and percentages. Students will solve problems using addition, subtraction, multiplication and division. Students will learn how to match and transfer numbers, round numbers, figure averages and rank of a set of numbers. Reading simple graphs and determining weight, volume and temperature will be addressed. Converting English to Metric is introduced using selected conversation tables. *Prerequisite:* None required. However, the use a calculator may be taught before starting this lesson. *Note:* This course is not designed to teach basic arithmetic and mathematics from “ground zero.” It has been provided as a review of, and practice with problems, concepts, applications and calculations associated with basic mathematics. If extensive remedial work is needed, contact your local community college, career center, adult education program and/or local school board for available resources.

Learning Objectives:

At the completion of this lesson, the student will be able to:

- ◆ Read and compare whole numbers.
- ◆ Match and transfer numbers (or sets of numbers) from one source to another source.
- ◆ Solve math/arithmetic problems using addition, subtraction, multiplication and division.
- ◆ Find the average (or mean) of a set of whole numbers.
- ◆ Calculate percent and percentages.
- ◆ Convert numbers (i.e., fractions to decimals to percentages).
- ◆ Round numbers.
- ◆ Put numbers in rank order.
- ◆ Measure weight.
- ◆ Read temperature.
- ◆ Read and convert volumetric measurements.
- ◆ Read charts and graphs.

Methods of Instruction:

Lecture, calculation problems, self-study reading, application demonstrations (individual and group) and real-world examples.

Methods of Evaluation:

Individual presentations, “show me” demonstrations (*Skill Checks*), and written quizzes/exams (*PROficiency Practices and Assessment*) during and after training.

Lesson Materials Provided by PMA:

- ◆ *PMAEF Student Workbook – Basic Math*
- ◆ Student Handouts (problem exercises)
- ◆ *PMAEF Instructor Guide* with *SMART* Lesson Plan and *PROficiency Practices*
- ◆ PMAEF Item Bank (assessment questions) for construction of end of lesson examination.

☞ Note: Student Workbooks, handouts and item bank provided on CD or disk.

Lesson Topics & Content Outline:

- ◆ **Using a Calculator** (Optional)
 - Basic Functions and Symbols
- ◆ **Whole Numbers**
 - Reading Whole Numbers
 - Rounding Whole Numbers
 - Comparing Whole Numbers and Numerical Codes
- ◆ **Basic Arithmetic**
 - Adding and Subtracting Whole Numbers
 - Multiplying and Dividing Whole Numbers
- ◆ **Basic Math – Common Fractions**
 - Numerator and Denominator
 - Types of Fractions
 - Reducing Fractions
 - Adding and Multiplying Fractions
 - Subtracting Fractions
- ◆ **Basic Math - Decimals**
 - Converting, Adding and Subtracting Decimals
 - Converting, Multiplying and Dividing Decimals
 - Putting Decimals in Rank Order
- ◆ **Basic Math – Percent & Percentages**
 - Calculating Percent
 - Percentage Equivalents
 - Determining Percentage
 - Converting Percents to Decimals and Fractions
 - Solving for Base, Rate and Percent
- ◆ **Measurements** (Self-Study)
 - Types of Measurements
 - Weight Measurements – English & Metric.
 - Temperature Measurements – Celsius and Fahrenheit.
 - Volume Measurements – Wet and Dry
- ◆ **Reading Charts and Graphs**
 - Types of Graphs
 - X – Y Graphs
 - Bar Graphs
 - Histograms
- ❖ **End of Module Lesson Exam** (*PROficiency Assessment*)

☞ Note: See SMART Lesson Plan contained in the Instructor’s Guide for detailed topic content, flow of lesson, and in-training assessments/practices (*PROficiency Practices* and *Skill Checks*).