

## Component I: Core

### Module A: Introduction to the Profession of the Medical Assistant

#### Topic 8: Application of Math in Healthcare

##### Statement of Purpose

To prepare the learner with basic math skills.

##### Student Learning Outcomes

Upon completion of this topic, the learner will be able to:

1. Spell and define key terms.
2. Demonstrate calculation skills.
3. Calculate a correct sum when adding whole numbers.
4. Calculate a correct difference when subtracting whole numbers.
5. Calculate a correct product when multiplying whole numbers.
6. Calculate a correct quotient when dividing whole numbers.
7. Demonstrate competency in obtaining correct answers when working with decimals.
8. Define symbols and terms.

##### Terminology

- |               |                    |
|---------------|--------------------|
| 1. Addition   | 9. Metric          |
| 2. Apothecary | 10. Multiplication |
| 3. Decimal    | 11. Product        |
| 4. Division   | 12. Quotient       |
| 5. Divisor    | 13. Subtraction    |
| 6. Drams      | 14. Sum            |
| 7. Factor     | 15. Whole numbers  |
| 8. Liters     |                    |

##### References

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3. Blesi, M., Wise, B.A., & Kelley-Arney, C. (2012) *Medical Assisting Administrative and Clinical Competencies* (7<sup>th</sup> Ed.) Clifton Park, NY: Delmar, Cengage Learning.
4. Lindh, W., Pooler, M., Tamparo, C. & Dahl, B., (2013). *Comprehensive Medical Assisting Administrative and Clinical Competencies* (5<sup>th</sup> Ed.). Clifton Park, NY: Delmar, Cengage Learning.
5. Kronenberger, J., Southard D. L., & Woodson, D. (2012). *Comprehensive Medical Assisting* (4<sup>th</sup> Ed.). Philadelphia, PA: Lippincott, Williams & Wilkins.
6. Booth, K.A., Whicker, L.G., Wyman, T.D., & Moaney-Wright, S. (2011). *Medical Assisting: Administrative & Clinical Competencies with Anatomy and Physiology*. (4<sup>th</sup> Ed.). New York, NY: McGraw-Hill Company, Inc.

7. Dennerll, J.T., & Davis, P.E. (2010). *Medical Terminology: A Programmed Systems Approach (10<sup>th</sup> Ed)*. Clifton Park, NY: Delmar, Cengage Learning.
8. Proctor, D. B., & Young-Adams, A. P. (2011). *Kinn's The Medical Assistant: An Applied Learning Approach (11<sup>th</sup> Ed.)*. Philadelphia, PA: Saunders Elsevier.

**Websites**

1. <http://ca-hwi.org>

Content Outline/Theory Objectives	Suggested Learning Activities
<b>Objective 1</b> <b>Spell and define key terms.</b> <ul style="list-style-type: none"> <li>A. Review the terms listed in the terminology section.</li> <li>B. Spell the listed terms accurately.</li> <li>C. Pronounce the terms correctly.</li> <li>D. Use the terms in their proper context.</li> </ul>	<ul style="list-style-type: none"> <li>A. Games: word searches, crossword puzzles, Family Feud, Jeopardy, bingo, spelling bee, hangman, and concentration.</li> <li>B. Administer vocabulary pre-test and post-test.</li> <li>C. Discuss learning gaps and plan for applying vocabulary.</li> </ul>
<b>Objective 2</b> <b>Demonstrate calculation skills.</b> <ul style="list-style-type: none"> <li>A. Methods of calculating whole numbers               <ul style="list-style-type: none"> <li>1. Addition</li> <li>2. Subtraction</li> <li>3. Multiplication</li> <li>4. Division</li> <li>5. Ratios</li> </ul> </li> <li>B. Tools               <ul style="list-style-type: none"> <li>1. Understanding formulas.</li> <li>2. Memorization of basic tables.</li> <li>3. Calculators.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>A. Lecture/Discussion</li> <li>B. Assigned Reading</li> <li>C. Repetition using programmed instruction, computer assisted training or refer to math lab.</li> <li>D. Utilize Nursing and Allied Health Math Tutorial CD available at <a href="http://ca-hwi.org">http://ca-hwi.org</a></li> </ul>
<b>Objective 3</b> <b>Calculate a correct sum when adding whole numbers.</b> <ul style="list-style-type: none"> <li>A. Fast way of counting.</li> <li>B. Result is a sum.</li> </ul>	<ul style="list-style-type: none"> <li>A. Lecture/Discussion</li> <li>B. Assigned Reading</li> </ul>
<b>Objective 4</b> <b>Calculate a correct difference when using subtraction of whole numbers.</b> <ul style="list-style-type: none"> <li>A. Opposite of addition.</li> <li>B. Result is the difference.</li> </ul>	<ul style="list-style-type: none"> <li>A. Lecture/Discussion</li> <li>B. Assigned Reading</li> </ul>
<b>Objective 5</b> <b>Calculate a correct product when using multiplication of whole numbers.</b> <ul style="list-style-type: none"> <li>A. Repeated addition.</li> <li>B. Numbers that are multiplied are factors.</li> <li>C. The result is the product.</li> </ul>	<ul style="list-style-type: none"> <li>A. Lecture/Discussion</li> <li>B. Assigned Reading</li> </ul>
<b>Objective 6</b> <b>Calculate a correct quotient when using division of whole numbers.</b> <ul style="list-style-type: none"> <li>A. Divisors split numbers into equal parts.</li> <li>B. Numbers that are divided are dividends.</li> <li>C. The result is the quotient.</li> </ul>	<ul style="list-style-type: none"> <li>A. Lecture/Discussion</li> <li>B. Assigned Reading</li> </ul>

<p><b>Objective 7</b>  <b>Demonstrate competency in obtaining correct answers when working with decimals.</b></p> <p>A. Decimal factors</p> <ol style="list-style-type: none"> <li>1. Used to express a common fraction of a whole number and expressed in multiple of 10.             <ol style="list-style-type: none"> <li>a. Numbers not expressed in a fraction have a decimal separator.</li> <li>b. Decimal fraction is expressed without a denominator.</li> </ol> </li> <li>2. Five tenths 0.5 or 5/10.</li> <li>3. <math>0.333333=1/3</math>.</li> <li>4. <math>0.25=1/4</math>.</li> <li>5. Seven hundredths 0.07 or 7/100.</li> <li>6. Eleven thousandths 0.011 or 11/1000.</li> <li>7. Each place beyond the decimal point is extended to give meaning when significant.</li> </ol>	<p>A. Lecture/Discussion  B. Assigned Reading</p>
<p><b>Objective 8</b>  <b>Define symbols and terms</b></p> <p>A. = equal to  B. <math>\neq</math> or <math>\neq</math> Not equal to  C. &gt; greater than  D. &lt; less than  E. Sum is the result of addition  F. Difference is the result of subtraction  G. Product is the result of multiplication  H. Numerator is the “top” number in a fraction  I. Denominator is the “bottom” number in a fraction  J. Metric is the basic units of volume and weight, measured in liters and grams  K. Apothecary uses minims, fluid drams, fluid ounces, pints, quarts, and gallons to measure volume  L. Household units of measurement used are volume, i.e., drops, teaspoons, tablespoons, ounces, cups, pints, quarts, and gallons.</p>	<p>A. Lecture/Discussion  B. Assigned Reading</p>