MA 3B/3C	Mathematics Embedded Credit
Cape Career & Technology Center	Last Update: April 2017
Topic: Exponents, Square Roots, Scientific Notation	Focus: Word Problems and Calculator Operations

Show-Me Standards: MA1, MA5	MO Grade Level Expectations: N1C8, N1C10, N2B9, N2C10, N1C7	NCTM Standards: 1A, 18B, 18C, 18D

OBJECTIVE: Students will be able to use previous knowledge to solve word problems involving exponents, square roots and scientific notation. Students will use a calculator to perform these operations.

Introduction:
The calculator can be an effective and useful tool for aiding the business leader in calculating good estimates, keeping track of the expenses and costs of various projects, determining profit/loss for a project and projecting future business growth. In the realm of personal finances, the calculator can be a very effective means for accurately developing and maintaining a monthly budget.

The calculator is widely used and accepted in the business, industry and career fields. Having good calculator skills is essential to success for the fast-paced world of business. Thus, the Cape Career and Technology Center supports, and encourages, the use of calculators whenever possible for our students.

Students who need assistance in the effective use of a calculator are encouraged to seek help from her/his instructor, the Basic Skills Instructor, or the Vocational Resource Educator. Individual, and group, sessions are conducted to teach effective use of calculators in solving mathematical operations in each area of skill training.

During classroom lessons, instructors will provide basic operation methods for using a calculator to assist the student in problem solving. The key to good use of a calculator focuses on knowing the basic operations that are required to solve the presenting problem. After determining what operations need to be completed to solve the problem the student can effectively use the calculator to speedily get the answer that is being sought.

Calculators, like computers, are only as good as the information that is entered into them. Having a basic understanding of the problem is vital to effective use of the calculator. Students must be prepared to ask for assistance in the use of calculators if they do not understand how they can help her/him with skill training problems.

WHO TO CONTACT FOR HELP WITH CALCULATOR USE IN PROBLEM SOLVING:
1. Classroom instructor.
2. Vocational Resource Educator.
3. Basic Skills Instructor.
4. Regular Education Math Instructor.

WORD PROBLEMS:

1. A square wall is to be covered with seamless vinyl siding. The area of the wall is 169 square feet. What length should the seamless vinyl siding be cut if the siding is to be installed in one length across the wall?

2. The volume of a box is 729 cubic inches. Your manager wants you to ship a 7"L x 8"W x 5" H item in the box. You know that the volume of a cube equals the side cubed. What is the measurement of the side of the box and will this item fit in the box for shipping?

3. You are asked to paint a partition that is shaped like a right triangle in a classroom. The Building Supply store where you are getting the paint asks you for the area that the paint will cover to help you buy the right amount of paint. Before going to the Building Supply store you were given two measurements from the partition. From the base of the classroom wall to the end of the partition is 6 ft. From the end of the partition diagonally to the top of the classroom wall is 10 ft. What is the area of the partition to be painted? (Note: $A_t = \frac{1}{2}$ bh)

4. The area of a cube play box at your daycare is 216 square inches. You decide that you would like another one, just like the one you have. When ordering another one from a catalog company you are asked if you want one that is 2", 4", 6", 8", or 10" tall? Which one do you order to get one just like the one you have? (Note: $A_c = 6s^2$)

5. By area, the former U.S.S.R. was the largest country, having 8.649×10^6 square miles of land. At this time Canada was the second largest country in the world. Canada has 4.797×10^6 square miles less area than the former U.S.S.R. How big is Canada in terms of land area? Give answer in ordinary notation.

6. If a computer can perform an addition operation in 1.5×10^{-6} seconds, in how much time can it perform 1500 addition operations?