

**TEACHER EXCHANGE  
LESSON PLAN TEMPLATE**

Program: CAWS - Yutaka

Instructor: Anita Forrest

Course Title: Pre-Algebra 8th grade

|                |                         |
|----------------|-------------------------|
| Date:          | 7/18-7/20/12            |
| Lesson Length: | 2-3 class periods       |
| Topics:        | Surface Area and Volume |

**OVERVIEW/ANNOTATION:**

Students will be put into groups. Each group will be given a rectangular prism such as a cereal box. Using various sizes of other rectangular prisms, students will determine the maximum number of prisms original container will hold. A video of a trucking company will be shown to introduce students to the lesson.

**BACKGROUND/PREPARATION:**

Prior to this lesson, students will have reviewed area and perimeter of geometric shapes. Students will also have had access to online sites showing nets of 3-D figures.

**PRIMARY LEARNING OBJECTIVES:**

- draw nets from rectangular prisms, in order to solve surface area problems.
- calculate the surface area and volume of rectangular prisms and cubes.
- solve real-world problems, involving surface area and volume, using a variety of problem-solving strategies.

**ESSENTIAL QUESTION(S):**

What sorts of real-world situations require knowledge of surface area and volume? How do you solve these types of problems?

**MATERIALS, EQUIPMENT AND TECHNOLOGY RESOURCES**

|                |                        |   |             |   |               |
|----------------|------------------------|---|-------------|---|---------------|
| Textbook       | Lab Manual             | x | Video       |   | Other         |
| Adv. Committee | Posters                | x | Multi-Media |   |               |
| Speaker        | Supplemental Materials | x | Internet    | x | Manipulatives |

**CONTENT STANDARDS & TASKS:**

*Alabama Course of Study: Technical Education*

Determine the surface area and volume of prisms, cylinders, cones, and spheres.  
Determine formulas for surface area and volume.

**PROCEDURES, ACTIVITIES, AND LEARNING EXPERIENCES**

|                  |          |            |   |            |  |            |
|------------------|----------|------------|---|------------|--|------------|
| Individual work  | x        | Group Work |   | Lecture    |  | Skills USA |
| Class Discussion | x        | Project    |   | Speaker    |  | Live Work  |
| x                | Visuals  | Review     | x | Video      |  |            |
|                  | Homework | Handout    |   | Field Trip |  |            |

**ASSESSMENT STRATEGIES**

|   |                     |   |                  |   |             |  |                          |
|---|---------------------|---|------------------|---|-------------|--|--------------------------|
| x | Homework            |   | Portfolio        | x | Class Work  |  | Test                     |
|   | Teacher Observation | x | Other: Exit Slip |   | Performance |  | Feedback from Discussion |

**LESSON INSTRUCTION INCLUDES:**

|   |                        |   |                        |   |                             |
|---|------------------------|---|------------------------|---|-----------------------------|
|   | Safety Instruction     | x | Presentation           | x | Higher Order Reasoning      |
| x | Project-Based Learning |   | Role Playing           |   | Work Ethics                 |
|   | Integrated Academics   |   | Simulation             |   | Integrated CTSO Experiences |
| x | Employability Skills   | x | Problem Solving Skills |   | Management Skills           |

**TEAMWORK ACTIVITIES:**

Students will work in groups in order to determine the maximum numbers of prisms that will fit in container.

**PROVISIONS FOR INDIVIDUAL DIFFERENCES:**

Students will also have access to an internet resource.

**AVAILABLE STUDENT INDUSTRY CREDENTIALS:**

**COURSE/PROGRAM CULMINATING PROJECT:**

Students will be given a project called "Ping Pong Madness" in which they are to design packaging for a company that ships ping pong balls. Students will present their their ideas for packaging through a power point presentation.