

## Module Outline

<b>Item</b>	<b>Description</b>
Name of Modules	Finding volume and surface areas of solid prisms and cylinders
Description	<p>Being able to find the volume and surface area of a solid is an important skill to possess. If you can find the amount of surface or space it can hold it may save time and resources from ordering too much or too little.</p>
Learning Objectives	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>● identify and classify solids as prisms, cylinders, pyramids, cones, spheres, and polyhedra.</li> <li>● describe cross sections in solids.</li> <li>● calculate the surface area of the five solids.</li> <li>● calculate the volume of the five solids.</li> <li>● use surface area and volume to calculate lengths and heights of solids.</li> <li>● calculate and use surface area and volume to solve real-world problems.</li> </ul>
Learning Activities	<ul style="list-style-type: none"> <li>● Instructional videos from YouTube, Edpuzzle, self-produced.</li> <li>● PDF printable notes. Annotated.</li> <li>● Practice problems through online textbook.</li> <li>● Learner-learner interactions through Flipgrid, discussion boards, Zoom, GSuite, etc.</li> <li>● Teacher conferencing hours and tutoring online.</li> <li>● Real-world assessment/mini-project.</li> </ul>

<p>Additional Resources</p>	<p>Possible media might include, but is not limited to...</p> <p>Learner-Content Media: Google Classroom, YouTube, Edpuzzle, self-produced videos, PDF printable notes, online textbook...</p> <ul style="list-style-type: none"><li>• Watch videos, take notes, annotate printable notes, work problems online...</li></ul> <p>Learner-Instructor Media: Zoom online office hours, email, Google Classroom discussion/comment, online tutoring...</p> <ul style="list-style-type: none"><li>• If additional help is necessary for the student...online office hours and tutoring allow for one on one help. Email and discussion/comments are an easy way to get quick responses from the instructors.</li></ul> <p>Learner-Learner Media: Flipgrid, Zoom, GSuite (Docs/Slides), discussion boards, Google Classroom...</p> <ul style="list-style-type: none"><li>• Students create a mini-tutorial on selected problems and post on Flipgrid, comment on fellow students' videos, create a discussion thread posting how a problem was solved, be a part of an online conferencing breakout room (Zoom) where the students help each other with their practice problems, collaborate on selected problems through Docs or Slides....</li></ul>
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# Module 16: Applied Volume and Surface Area of Prisms and Cylinders

## Overview

In this module, we will explore the volume and surface area of solid prisms and cylinders

## Learning Objectives

On completion of this module, students will be able to:

- Calculate the surface area and volume of prisms and cylinders.
- Demonstrate the application of volume formulas through solving real-world problems, video presentation and/or discussion.

## Learning Activities

### 1. Read

Annotated PDF notes posted on Google Classroom. Guided practice problems will be included.

### 2. View

Instructional videos found through YouTube or self-produced, posted on Google Classroom. Videos may also be posted on Edpuzzle to allow for questioning and reflection at certain pauses in the video.

### 3. Discuss

Students will be given compound structures of regular prisms and they will have to work out how to find the volume and/or surface area in small groups. Each group will present

out how they solved for volume and surface area. Presentations may occur through Zoom, Flipgrid, or an appropriate discussion board.

#### **4. Take a Quiz**

Go to Quiz Module 16 in the Classwork section of the Google Classroom. It is a matching test worth 25 points. You will have 30 minutes to complete and submit your quiz. You have to match the equation with the shape that it goes with.

#### **5. Complete an Assignment**

Students will practice the calculation and application of volume formulas with prisms and cylinders through their online textbook. Specific problems can be chosen by the instructor along with response limits a student is given before getting the correct answer or having the problem lock out.

Students will work together in small groups to design an in ground pool. The students will need to estimate the amount of dirt to be removed, the number of tiles required to line the pool, and the amount of water that will be required to fill it. Groups will be given a budget and will need to pay for dirt removal (per square yard), tile (per square foot), and water (per acre foot).

## **Resources**

- Google Classroom (main hub for content and direction)
- Video resources such as YouTube, Edpuzzle, Screencastify, ActivInspire, etc.
- Big Ideas Math online textbook
- KUTA Worksheet Builder
- Zoom
- Flipgrid, GSuite, Schoology