

# 07 Surface Area and Volume

Content Area: **Mathematics**  
Course(s):  
Time Period: **Week1**  
Length: **1 Week**  
Status: **Published**

## Stage 1: Desired Results

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Surface Area and Volume

## Unit Overview/ Rationale

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## Standards & Indicators

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Common Core: Mathematics, Common Core: Grade 8, Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

MA.7.7.G.A.3

Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

MA.7.7.G.B.6

Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

## **Big Ideas - Students will understand that...**

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- Volume and surface area of three-dimensional objects can be used to solve real world and mathematical problems.
- Through the use of diagrams and nets, students relate the dimensions of three-dimensional figures to their faces, bases, and curved surfaces to justify formulas and surface area.
- Shapes that result from slicing three-dimensional figures can be described as two-dimensional figures.

## **Essential Questions - What provocative questions will foster inquiry and transfer of learning**

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- Why is it important to know how to find the volume and surface area of three-dimensional figures?
- How is the volume of a triangular prism related to the volume of a rectangular prism?
- How do two-dimensional shapes that make up a cross section relate to the three-dimensional shapes from which they originated?

## **Content - Students will know...**

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Key concepts:

Bases, center of sphere, cone, cross section, cube, cubic unit, cylinder, edge, face, height, net, prism, pyramid, sphere, surface area, three-dimensional figure, vertex, volume

## **Skills - Students will be able to...**

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- Identify three-dimensional solids, such as prisms, cylinders, and pyramids.
- Find the surface area and volume of prisms and cylinders.
- Identify cross sections of real-world three-dimensional solids.

## **Stage 2: Assessment Evidence**

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### **Assessment**

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## **Stage 3: Learning Plan**

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### **Learning Activities**

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### **Resources**

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Pearson

Algebra 1

c2012,

Chapter 7