# Unit 4 - Geometry

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **Full Year**
Status: **Published**

## Unit Overview

Solve real-world and mathematical problems involving area, surface area, and volume. Modules 8 &9.

## Enduring Understandings

Statistical data has a distribution that can be described by its center or by its spread.

Statistical data can be represented in a variety of ways.

Prisms and pyramids are examples of three-dimensional geometry

A net is a two-dimensional figure that can be folded to make a three-dimensional figure.

A right rectangular prism with fractional edge lengths can be packed with unit cubes of the appropriate unit fraction edge lengths to find the volume.

## Essential Questions

How do two-dimensional and three-dimensional geometry differ?

What is the relationship between a triangle and a rectangle with the same dimensions?

What is the relationship between surface area and volume?

How can a trapezoid be decomposed to help find its area?

## Learning Objectives

Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes.

Find the volume of a right rectangular prism with fractional edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism.

Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of

a side joining points with the same first coordinate or the same second coordinate.

Represent three-dimensional figures (e.g. pyramid, triangular prism, rectangular prism) using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

## Standards: Content

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|---|---|
| 6.G | Geometry |
| 6.G.A | Solve real-world and mathematical problems involving area, surface area, and volume |
| 6.G.A.1 | Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. |
| 6.G.A.2 | Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas □ = □□□ and □ = □□ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. |
| 6.G.A.3 | Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. |
| 6.G.A.4 | Represent three-dimensional figures (e.g., pyramid, triangular prism, rectangular prism) using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. |

## Standards: Interdisciplinary

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|---|---|
| 9.4.8.IML.1 | Critically curate multiple resources to assess the credibility of sources when searching for information. |
| 8.2.8.ITH.1 | Explain how the development and use of technology influences economic, political, social, and cultural issues. |

## Assessment Evidence

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| Formative | Collaborative Activities, Homework, Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Games, Exit Slips, Pre-Assessments, Math Message – Warm up, Questioning, Teacher Made Pages, Learning Centers, LinkIt, Problem of the Day, Problem of the Week, Entrance Slips, Pre-Assessments |
| Summative | LinkIt Benchmark Assessments, Tests, Pre-Assessments, Quizzes, Written Responses |
| Alternative & Benchmark | Alternative – Reteaching, One on One Conferencing, Learning Centers, Levels Homework, Higher Order Thinking Problems, Additional leveled practice<br>Benchmark - LinkIt Benchmark Assessments, Totowa TPA |

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| Assessment Evidence Resource |

## Instructional Resources

Smartboard, Computers, iPads, websites and digital interactives/models, multi-media presentations, video streaming, Brain Pop, Microsoft 365, Primary and Secondary Source Documents, Assorted Manipulatives, Khan Academy, Crosswalk Coach for the Common Core Standards, Ready Common Core Mathematics Instruction and Practice, Common Core Coach, Calculators, Reveal Math Resources.

Instructional Resource List

## Curricular Mandates

*Below are the curricular requirements as defined in NJ Administrative Code and Statute*

| | | | |
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| | Amistad | | Diversity, Equity, and Inclusion |
| | Holocaust | | LGBT and Disabilities (Grades 6-12) |
| | Climate Change | | Asian American & Pacific Islander |

## Social Emotional Learning (SEL) Competencies

*NJ Social and Emotional Learning Competencies & Sub-Competencies*

| | | | |
|---|---|---|---|
| | Self-Awareness | X | Relationship Skills |
| X | Responsible Decision-Making | | Social Awareness |
| X | Self-Management | | |

## 21st Century Skills & Themes

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|---|---|---|---|---|---|
| | Global and Cultural Awareness | X | Technology Literacy | | Planning and Budgeting |
| X | Creativity and Innovation | | Financial Institutions | | Risk Management and Insurance |
| X | Information and Media Literacy | | Digital Citizenship | | Economic and Government Influences |
| | Critical Thinking and Problem Solving | | Credit Profile | | Career Awareness and Planning |
| | Civic Financial Responsibility | | Financial Psychology | | |