GRADE 6– Unit 3

Mission Statement
The primary goal of the Swedesboro-Woolwich School District is to prepare each student with the real life skills needed to compete in a highly competitive global economy. This will be achieved by providing a comprehensive curriculum, the integration of technology, and the professional services of a competent and dedicated faculty, administration, and support staff. Guiding this mission will be Federal mandates, including No Child Left Behind, the New Jersey Core Curriculum Content Standards, and local initiatives addressing the individual needs of our students as determined by the Board of Education. The diverse resources of the school district, which includes a caring PTO and active adult community, contribute to a quality school system. They serve an integral role in supporting positive learning experiences that motivate, challenge and inspire children to learn.

Unit/Module Overview

Unit Three includes statistical measures, data displays, and geometry encompassing sixty days. The main focus is statistics: measures of center, variation, and absolute deviation with various plots and displays, and areas of polygons, surface area, and volume. The main focus for geometry is areas of parallelograms, triangles, and trapezoids and three-dimensional figures with volumes. Mathematical Practices from the box below will be connected to the daily lessons.

Unit 3	Content Focus	Math Practices	Vocabulary
18 days	Areas of parallelograms, triangles, and trapezoids, and polygons in the coordinate plane. Three-dimensional figures with surface areas of prisms and pyramids, and volumes of rectangular prisms	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	· Composite figure · Polygon · Edge · Face · Net · Polyhedron · Priam · Pyramid · Solid · Surface Area · Vertex · Volume

17 days	Integers with Comparing and Ordering, Number Lines, Absolute value, and Coordinate Plane	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	· Absolute Value · Coordinate Plane · Integers · Negative numbers · Opposites · Origin · Positive Numbers · Quadrants

12 Days	Introduction to statistics, mean, measures of center, measures of variation, and mean absolute deviation	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	· First quartile · Interquartile range · Mean · Mean absolute deviation · Measure of center · Measure of variation · Median · Mode · Outlier · Quartiles · Range · Statistics · Third Quartile

12 days	Plots and displays: stem and leaf, histograms, shapes of distribution, and box-and-whisker plots.	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	· Box and whisker plot · Frequency · Frequency table · Histogram · Leaf · Skewed right · Skewed left · Stem · Stem and leaf plot · Symmetry

Standards Covered in Current Unit/Module
Standards
MA.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. MA.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 $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

MA.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.

MA.6.G.A.4 Represent three-dimensional figures 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.

MA.6.SP.A.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.

MA.6.SP.A.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

MA.6.SP.A.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

MA.6.SP.B.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

MA.6.SP.B.5 Summarize numerical data sets in relation to their context, such as by:

Content Focus	NJSLS Priority Standards	Learning Goals	Learning Targets
Apply knowledge of operations to display data with measures of center and analyze quartile ranges. Apply and extend previous understandings of data displays to construct stem and leaf plots, histograms,	MA.6.6.SP.1 MA.6.6.SP.2 Ma.6.6.SP.3 Ma.6.6.SP.4 Ma.6.6.SP.5	Calculate quantitative measures of center (median, mean) and variability (interquartile range, mean absolute deviation) (6.SP.5) Describe patterns and deviations from patterns in the data (6.SP.5) Choose the appropriate measure of center and variability based on the shape of the data distribution and the context in which the data were gathered	I can perform basic processes, such as ● Describe the distribution of a set of data by center, spread and overall shape (6.SP.2) ● Display numerical data on a histogram and box plot (6.SP.4) ● Describe surface features of numerical data sets (6.SP.5)

and box and whisker plots along with shapes of the distributions.		(6.SP.5)	
Understand formulas for areas of polygons. Use of coordinate plane for polygon drawings and distances.	MA.6.6.G.1 MA.6.6.G.3 MA.6.6.NS.6 MA.6.6.NS.8	Solve real-world or mathematic problems involving the area of polygons (6.G.1) Use coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate (6.NS.6) Use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate (6.G.3)	I can perform basic processes, such as ● Find the area of a right triangle, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes (6.G.1) ● Draw polygons in the coordinate plane given coordinates for the vertices (6.G.3) ● Find and position rational numbers, including integers, on a coordinating plane (6.NS.6) ● Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflection across one or both axes (6.NS.6) ● Graph points (including rational numbers) in all four quadrants of the coordinate plane to solve real world and mathematical problems (6.NS.6, 6.NS.8, 6.G.3)
Apply and extend previous understandings of quantities to include positive and negative numbers with absolute values.	MA.6.6.G.2 MA.6.6.G.4	Apply the formula V=lwh and V=bh to find the volume of a right rectangular prism with fractional edge length in the context of solving real-world and mathematical problems (6.G.2) Solve real world or mathematical problems involving the area of a right prism (6.G.4)	I can perform basic processes, such as ● Find the volume of a right rectangular prism by packing it with unit cubes of the appropriate fractional edge length (6.G.2) ● Represent three-dimensional figures using nets made up of rectangles and triangles (6.G.4)

		Use nets to find the surface area of the figure (6.G.4)	
Apply and extend previous understandings of quantities to include positive and negative numbers with absolute values.	MA.6.6.NS.5 MA.6.6.NS.7 MA.6.6.NS.6 MA.6.6.NS.8	Write, interpret and explain statements of order for rational numbers in real world context (6.NS.7) Understand the absolute value of a rational number as its distance from 0 on the number line (6.NS.7) Distinguish comparisons of absolute value from statements of order (6.NS.7)	I can perform basic process, such as ● Use positive and negative numbers to represent quantities in real-world context, explaining the meaning of zero in each situation (6.NS.5) ● Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line (6.NS.6) ● Find and position rational numbers, including integers on a number line (6.NS.6) ● Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram (6.NS.7)

Weekly Learning Activities and Pacing Guide						
Unit 3	**Topic**	**Activity**	**Learning Goals**	**Learning Targets**	**Resources**	**Assessments**
Weeks 22-25	Areas of parallelograms, triangles, and trapezoids, and polygons in the coordinate	**Whole Group**: Ch. 4 /Lessons 1-4 (from Big Ideas Teachers Manual) Chapter Opener, Start Thinking! Warm-Up	SWBAT find areas of parallelograms. SWBAT solve real-life problems. SWBAT find areas of	I can: ● recognize and know how to compose and decompose polygons into triangles and rectangles. ● compare the area of a triangle to the area of a	Big Ideas NJ DOE Model Curriculum National Library of Virtual Manipulatives	After Lesson 7.2 – Quiz After Lesson 7.4 -Quiz After Chapter is completed -

	plane. Three-dimensional figures with surface areas of prisms and pyramids, and volumes of rectangular prisms.	Introduce Vocabulary Words. Laurie's notes. Activity Journal with partners. Teachers can decide which pages will be done in groups and which pages will be done during independent work.) **Small Group**: Journal activities. Lesson problems from text or on-line digital book. Lesson tutorials from dynamic classroom. Differentiated lessons from dynamic classroom. Skills review handbook. **Independent Work:** Resources by the Chapter – Practice A and B Puzzle Time Student Text problems Enrichment and Extension	triangles. SWBAT find areas of trapezoids. SWBAT find areas of composite figures. SWBAT draw polygons in the coordinate plane. SWBAT find distances in the coordinate plane. SWBAT draw three-dimensional figures. SWBAT find the number of faces, edges, and vertices of solids. SWBAT use nets to represent prisms. SWBAT find the surface area of prisms. SWBAT solve real-life problems. SWBAT use nets to represent pyramids. SWBAT find the surface area of pyramids. SWBAT find the volume of	composed rectangle. ● apply techniques to special quadrilaterals and polygons to solve real world problems. ● justify formulas for triangles and parallelograms. ● draw polygons in the coordinate plane. ● use coordinates to find the length of a side of a polygon ● calculate the volume of a right rectangular prism. ● apply volume formulas to solve real world problems. ● recognize that 3-D figures can be represented by nets. ● represent three-dimensional figures using nets for rectangles and triangles. ● can combine areas of nets to find surface area of a 3-dimensional figure.	Accelerated Math Corestandards.org NJCTL Chromebooks	Chapter 87Test S/W Grade 6 Math Benchmark Unit 3

		Technology Connection **Whole Group**: Ch. 8 /Lessons 1-4 (from Big Ideas Teachers Manual) Chapter Opener, Start Thinking! Warm-Up Introduce Vocabulary Words. Laurie's notes. Activity Journal with partners. Teachers can decide which pages will be done in groups and which pages will be done during independent work.) **Small Group:** Journal activities. Lesson problems from text or on-line digital book. Lesson tutorials from dynamic classroom. Differentiated lessons from dynamic classroom. Skills review handbook.	prisms with fractional edge lengths by using models. SWBAT find the volume of prisms by using formulas.			

		Independent Work: Resources by the Chapter – Practice A and B Puzzle Time Student Text problems Enrichment and Extension Technology Connection				
Weeks 26-28	Integers with Comparing and Ordering, Number Lines, Absolute value, and Coordinate Plane	**Whole Group**: Ch. 6 /Lessons 1-5 (from Big Ideas Teachers Manual) Chapter Opener, Start Thinking! Warm-Up Introduce Vocabulary Words. Laurie's notes. Activity Journal with partners. Teachers can decide which pages will be done in groups and which pages will be done during independent work.) **Small Group:** Journal activities.	SWBAT understand positive and negative integers and use them to describe real=life situations SWBAT graph integers on a number line SWBAT use a number line to compare positive and negative integers SWBAT find the absolute value of numbers SWBAT use absolute value to compare numbers in real-life situations SWBAT describe the location of points in the	I can: ● identify an integer and its opposite. ● use integers to represent quantities in real world situations. ● explain where zero fits into a situation represented by integers. ● find and position integers and other rational numbers on a horizontal or vertical number line diagram. ● find a position pairs of integers and other rational numbers on a coordinate plane. ● distinguish comparisons of absolute value from statements about order and apply to real world contexts.	Big Ideas NJ DOE Model Curriculum National Library of Virtual Manipulatives Accelerated Math Corestandards.org NJCTL Chromebooks	After Lesson 8.2 – Quiz After Lesson 8.4 -Quiz After Chapter is completed - Chapter 8 Test S/W Grade 6 Math Benchmark Unit 3

		Lesson problems from text or on-line digital book. Lesson tutorials from dynamic classroom. Differentiated lessons from dynamic classroom. Skills review handbook. **Independent Work:** Resources by the Chapter – Practice A and B Puzzle Time Student Text problems Enrichment and Extension Technology Connection	coordinate plane SWBAT plot points on the coordinate plane SWBAT find the distances between points on the coordinate plane	• calculate absolute value. • graph points in all four quadrants of the coordinate plane. • solve real-world problems by graphing points in all four quadrants. • calculate the distance between two points with the same first coordinate or same second coordinate.		
Weeks 29-32	Introduction to statistics, mean, measures of center, measures of variation, and mean absolute deviation.	**Whole Group**: Ch. 9 /Lessons 1-5 (from Big Ideas Teachers Manual) Chapter Opener, Start Thinking! Warm-Up Introduce Vocabulary Words. Laurie's notes.	SWBAT recognize statistical questions. SWBAT use dot plots to display numerical data. SWBAT understand the concept of the mean of data sets. SWBAT find the mean of	I can: • recognize that data has variability. • recognize a statistical question. • identify that a set of data has distribution. • describe a set of data by its center. • describe data with clusters, peaks, gaps, and symmetry.	Big Ideas NJ DOE Model Curriculum National Library of Virtual Manipulatives Accelerated Math Corestandards.org	After Lesson 9.3 – Quiz After Lesson 9.5 -Quiz After Chapter is completed - Chapter 9 Test

		Activity Journal with partners. Teachers can decide which pages will be done in groups and which pages will be done during independent work.) **Small Group**: Journal activities. Lesson problems from text or on-line digital book. Lesson tutorials from dynamic classroom. Differentiated lessons from dynamic classroom. Skills review handbook. **Independent Work:** Resources by the Chapter – Practice A and B Puzzle Time Student Text problems Enrichment and Extension Technology Connection	data sets. SWBAT compare and interpret the means of data sets. SWBAT understand the concept of measures of center. SWBAT find the median and mode of data sets. SWBAT find the range of data sets. SWBAT find the interquartile range of data sets. SWBAT check for outliers in data sets. SWBAT understand the meaning of mean absolute deviation. SWBAT find the mean absolute deviation of data sets.	● recognize measures of central tendency. ● recognize measures of variance.	NJCTL Chromebooks	

Materials and Resources	Possible Assessments
• Big Ideas - Big Ideas Learning LLC. 2014 www.bigideasmath.com • NJ DOE Model Curriculum www.state.nj.us/education/modelcurriculum • National Library of Virtual Manipulatives http://nlvm.usu.edu/en/nav/vlibrary.html • www.ixl.com • www.corestandards.org • http://www.njctl.org/courses/math/ • Chromebooks	• Big Ideas Quiz 9.1-9.3 • Big Ideas Quiz 9.4-9.5 • Big Ideas Chapter 9 Assessment and Standards • Big Ideas Quiz 10.1-10.2 • Big Ideas Quiz 10.3-10.4 • Big Ideas Chapter 10 Assessment and Standards • Big Ideas Quiz 4.1-4.2 • Big Ideas Quiz 4.3-4.4 • Big Ideas Chapter 4 Assessments with Standards • Big Ideas Quiz 8.1-8.2 • Big Ideas Quiz 8.3-8.4 • Big Ideas Chapter 8 Assessment and Standards • S/W Grade 6 Math Benchmark Unit 3 • Journal Writing • Exit Tickets • Response Boards • IXL, or other technology programs • http://www.njctl.org/2012/10/nj-model-curriculum-assessments-available-on-line/

Technology Integration	Interdisciplinary Connections	21st Century Life and Career Skills
• 8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools . • Use digital camera or webcam to record problem explanations. . • Foster skill practice using specific apps . TECH.8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools. TECH.8.1.8.A.2 Create a document (e.g.,	• Reading and comprehension - involved for all word problems. • Social Studies: latitude and longitude / coordinate plane • Science: creating and reading data graphs • Social Studies - Types of Graphs/maps	• CRP6. Demonstrate creativity and innovation • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

newsletter, reports, personalized learning plan, business letters or flyers) using one or more digital applications to be critiqued by professionals for usability. ● TECH.8.1.8.A.3 Use and/or develop a simulation that provides an environment to solve a real world problem or theory. ● TECH.8.1.8.A.4 Graph and calculate data within a spreadsheet and present a summary of the results. ● TECH.8.1.8.A.5 Create a database query, sort and create a report and describe the process, and explain the report results.		

Link to Additional Components including Cross Curricular Connections, Accommodations, Assessments, Etc

ELA Enduring Understanding Statements