Standards for Mathematical Practice – Grade 7

Standards for Mathematical Practice	Explanations and Examples
1. Make sense of problems and persevere in solving them.	In grade 7, students solve problems involving ratios and rates and discuss how they solved the problems. Students solve real world problems through the application of algebraic and geometric concepts. Students seek the meaning of a problem and look for efficient ways to represent and solve it. They may check their thinking by asking themselves, "What is the most efficient way to solve the problem?", "Does this make sense?", and "Can I solve the problem in a different way?".
2. Reason abstractly and quantitatively.	In grade 7, students represent a wide variety of real world contexts through the use of real numbers and variables in mathematical expressions, equations, and inequalities. Students contextualize to understand the meaning of the number or variable as related to the problem and decontextualize to manipulate symbolic representations by applying properties of operations.
3. Construct viable arguments and critique the reasoning of others.	In grade 7, students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, and graphs, tables, and other data displays (i.e. box plots, dot plots, histograms, etc.). The students further refine their mathematical communication skills through mathematical discussions in which they critically evaluate their own thinking and the thinking of other students. They pose questions like "How did you get that?", "Why is that true?", "Does that always work?". They explain their thinking to others and respond to others' thinking.
4. Model with mathematics.	In grade 7, students model problem situations symbolically, graphically, tabularly, and contextually. Students form expressions, equations, or inequalities from real world contexts and connect symbolic and graphical representations. Students explore covariance and represent two quantities simultaneously. They use measures of center and variability and data displays (i.e. box plots and histograms) to draw inferences, make comparisons and formulate predictions. Students use experiments or simulations to generate data sets and create probability models. Students need many opportunities to connect and explain the connections between the different representations. They should be able to use all of these representations as appropriate to any problem's context.
5. Use appropriate tools Strategically.	Students consider available tools (including estimation and technology) when solving a mathematical problem and decide when certain tools might be helpful. For instance, students in grade 7 may decide to represent similar data sets using dot plots with the same scale to visually compare the center and variability of the data. Students might use physical objects or applets to generate probability data and use graphing calculators or spreadsheets to manage and represent data in different forms.
6. Attend to precision.	In grade 7, students continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning. Students define

	variables, specify units of measure, and label axes accurately. Students use appropriate terminology when referring to rates, ratios, probability models, geometric figures, data displays, and components of expressions, equations or inequalities.
7. Look for and make use of structure.	Students routinely seek patterns or structures to model and solve problems. For instance, students recognize patterns that exist in ratio tables making connections between the constant of proportionality in a table with the slope of a graph. Students apply properties to generate equivalent expressions (i.e. $6 + 2x = 3\ (2 + x)$ by distributive property) and solve equations (i.e. $2c + 3 = 15$, $2c = 12$ by subtraction property of equality), $c = 6$ by division property of equality). Students compose and decompose two- and three-dimensional figures to solve real world problems involving scale drawings, surface area, and volume. Students examine tree diagrams or systematic lists to determine the sample space for compound events and verify that they have listed all possibilities.
8. Look for and express regularity in repeated reasoning.	In grade 7, students use repeated reasoning to understand algorithms and make generalizations about patterns. During multiple opportunities to solve and model problems, they may notice that $a/b \div c/d = ad/bc$ and construct other examples and models that confirm their generalization. They extend their thinking to include complex fractions and rational numbers. Students formally begin to make connections between covariance, rates, and representations showing the relationships between quantities. They create, explain, evaluate, and modify probability models to describe simple and compound events.

Grade 7 Critical Areas (from CCSS pg. 46)
The Critical Areas are designed to bring focus to the standards at each grade by describing the big ideas that educators can use to build theircurriculum and to guide instruction. The Critical Areas for seventh grade can be found on page 46 in the *Common Core State Standards for Mathematics.*

1. **Developing understanding of and applying proportional relationships**
Students extend their understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems. Students use their understanding of ratios and proportionality to solve a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease. Students solve problems about scale drawings by relating corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships.

2. **Developing understanding of operations with rational numbers and working with expressions and linear equations**
Students develop a unified understanding of number, recognizing fractions, decimals (that have a finite or a repeating decimal representation), and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication, and division to all rational numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. By applying these properties, and by viewing negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero), students explain and interpret the rules for adding, subtracting, multiplying, and dividing with negative numbers. They use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems.

3. Solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume
Students continue their work with area from Grade 6, solving problems involving the area and circumference of a circle and surface area of threedimensional objects. In preparation for work on congruence and similarity in Grade 8 they reason about relationships among two-dimensional figures using scale drawings and informal geometric constructions, and they gain familiarity with the relationships between angles formed by intersecting lines. Students work with three-dimensional figures, relating them to two-dimensional figures by examining cross-sections. They solve real-world and mathematical problems involving area, surface area, and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes and right prisms.

4. Drawing inferences about populations based on samples
Students build on their previous work with single data distributions to compare two data distributions and address questions about differences between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences.

Expressions and Equations

• Use properties of operations to generate equivalent expressions.

Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coe

Student Friendly/"I Can" statements	Resources	A
1. Define like terms, coefficients, constants, linear expressions, and rational numbers. 2. Combine like terms with rational coefficients. 3. Factor and expand linear expressions with rational coefficients using the distributive property. 4. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	http://nlvm.usu.edu pattern blocks to describe like terms, coefficients	

Understand that rewriting an expression in different forms in a problem context can shed light on the problem and h related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*

Student Friendly/"I Can" statements	Resources	A
1. Write equivalent expressions with fractions, decimals, percents, and integers. 2. Rewrite an expression in an equivalent form in order to provide insight about how quantities are related in a problem context		

• Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; conve appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For exa $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $2 towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 i estimate can be used as a check on the exact computation.*

Student Friendly/"I Can" statements	Resources	A
1. Recognize key vocabulary in word problems. 2. Identify the problem. 3. Predict the outcome. 4. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. 5. Apply properties of operations to calculate with numbers in any form. 6. Convert between numerical forms as appropriate. 7. Assess the reasonableness of answers using mental computation and estimation strategies (compare answer to prediction).	http://nlvm.usu.edu	

Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and i
problems by reasoning about the quantities.

a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rati
equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence
each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*

Student Friendly/"I Can" statements	Resources	A
1. Fluently solve equations of the form $px + q = r$ and $p(x + q) = r$ with speed and accuracy. 2. Identify the sequence of operations used to solve an algebraic equation of the form $px + q = r$ and $p(x + q) = r$. 3. Use variables and construct equations to represent quantities of the form $px + q = r$ and $p(x + q) = r$ from real-world and mathematical problems. 4. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$**,** where p, q, and r are specific rational numbers. 5. Compare an algebraic solution to an arithmetic solution by identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? This can be answered algebraically by using only the formula for perimeter (P=2l+2w) to isolate w or by finding an arithmetic solution by substituting values into the formula.*		

b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific ratio
solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are p*
sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make,

Student Friendly/"I Can" statements	Resources	A
1. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. 2. Graph the solution set of the inequality of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. 3. Interpret the solution set of an inequality in the context of the problem.		

The Number System

• Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rat

Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; repres
on a horizontal or vertical number line diagram.

a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge b
are oppositely charged.*

Student Friendly/"I Can" statements	Resources	A
1. Describe situations in which opposite quantities combine to make zero (sports and money examples).	http://nlvm.usu.edu number lines	

b. Understand $p + q$ as the number located a distance $|q|$ from p, in the positive or negative direction depending on
negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational nu
world contexts.

Student Friendly/"I Can" statements	Resources	A
1. Understand addition and subtraction of positives and negatives and describe real world contexts.	http://nlvm.usu.edu number lines	

c. Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (–q)$. Show that the distanc
numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.

Student Friendly/"I Can" statements	Resources	A
1. Identify properties of addition and subtraction when adding and subtracting rational numbers.	http://nlvm.usu.edu number lines	

d. Apply properties of operations as strategies to add and subtract rational numbers.

Student Friendly/"I Can" statements	Resources	A
1. Apply properties of operations as strategies to add and subtract rational numbers.	http://nlvm.usu.edu number lines	

Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide ratio

a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations contin
of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multipl
Interpret products of rational numbers by describing real-world contexts.

Student Friendly/"I Can" statements	Resources	A
1. Recognize that the process for multiplying fractions can be used to multiply rational numbers including integers. 2. Know and describe the rules when multiplying signed numbers. 3. Apply the properties of operations, particularly distributive property, to multiply rational numbers. 4. Interpret the products of rational numbers by describing real-world contexts.		

b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with
rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by de

Student Friendly/"I Can" statements	Resources	A
1. Explain why integers can be divided except when the divisor is 0. 2. Describe why the quotient is always a rational number . 3. Know and describe the rules when dividing signed numbers, integers. 4. Recognize that –(p/q) = -p/q = p/-q. 5. Interpret the quotient of rational numbers by describing real-world contexts.		

c. Apply properties of operations as strategies to multiply and divide rational numbers.

Student Friendly/"I Can" statements	Resources	A
1. Identify how properties of operations can be used to multiply and divide rational numbers (such as distributive property, multiplicative inverse property, multiplicative identity, commutative property for multiplication, associative property for multiplication, etc.) 2. Apply properties of operations as strategies to multiply and divide rational numbers.		

d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number term repeats.

Student Friendly/"I Can" statements	Resources	A
1. Convert a rational number to a decimal using long division. 2. Explain that the decimal form of a rational number terminates (stops) in zeroes or repeats.		

Solve real-world and mathematical problems involving the four operations with rational numbers

Student Friendly/"I Can" statements	Resources	A
1. Add rational numbers. 2. Subtract rational numbers. 3. Multiply rational numbers. 4. Divide rational numbers. 5. Solve real-world mathematical problem by adding, subtracting, multiplying, and dividing rational numbers, including complex fractions.		

Statistics and Probability

• Use random sampling to draw inferences about a population.

Understand that statistics can be used to gain information about a population by examining a sample of the populat
population from a sample are valid only if the sample is representative of that population. Understand that random
representative samples and support valid inferences.

Student Friendly/"I Can" statements	Resources	A
1. Know statistics terms such as population, sample, sample size, random sampling, generalizations, valid, biased and unbiased. 2. Recognize sampling techniques such as convenience, random, systematic, and voluntary. 3. Know that generalizations about a population from a sample are valid only if the sample is representative of that population 4. Apply statistics to gain information about a population from a sample of the population. 5. Generalize that random sampling tends to produce representative samples and support valid inferences.	http://nlvm.usu.edu US Census Bureau	

Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. G
(or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the*
book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled
far off the estimate or prediction might be.

Student Friendly/"I Can" statements	Resources	A
1. Define random sample. 2. Identify an appropriate sample size. 3. Analyze & interpret data from a random sample to draw inferences about a population with an unknown characteristic of interest. 4. Generate multiple samples (or simulated samples) of the same size to determine the variation in estimates or predictions by comparing and contrasting the samples.	US Census Bureau	

Draw informal comparative inferences about two populations.

Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measurin the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) or the separation between the two distributions of heights is noticeable.*

Student Friendly/"I Can" statements	Resources	A
1. Identify measures of central tendency (mean, median, and mode) in a data distribution. 2. Identify measures of variation including upper quartile, lower quartile, upper extreme-maximum, lower extreme-minimum, range, interquartile range, and mean absolute deviation (i.e. box-and-whisker plots, line plot, dot plots, etc.). 3. Compare two numerical data distributions on a graph by visually comparing data displays, and assessing the degree of visual overlap. 4. Compare the differences in the measure of central tendency in two numerical data distributions by measuring the difference between the centers and expressing it as a multiple of a measure of variability.	http://nlvm.usu.edu US Census Bureau	

Use measures of center and measures of variability for numerical data from random samples to draw informal comp
two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally
chapter of a fourth-grade science book.*

Student Friendly/"I Can" statements	Resources	A
1. Find measures of central tendency (mean, median, and mode) and measures of variability (range, quartile, etc.). 2. Analyze and interpret data using measures of central tendency and variability. 3. Draw informal comparative inferences about two populations from random samples.	http://nlvm.usu.edu US Census Bureau	

Investigate chance process and develop, use, and evaluate probability models.

Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the
numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicat
unlikely nor likely, and a probability near 1 indicates a likely event.

Student Friendly/"I Can" statements	Resources	A
1. Know that probability is expressed as a number between 0 and 1. 2. Know that a random event with a probability of ½ is equally likely to happen 3. Know that as probability moves closer to 1 it is increasingly likely to happen 4. Know that as probability moves closer to 0 it is decreasingly likely to happen 5. Draw conclusions to determine that a greater likelihood occurs as the number of favorable outcomes approaches the total number of outcomes.	http://nlvm.usu.edu	

Approximate the probability of a chance event by collecting data on the chance process that produces it and observi
frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a numbe
that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*

Student Friendly/"I Can" statements	Resources	A
1. Determine relative frequency (experimental probability) is the number of times an outcome occurs divided by the total number of times the experiment is completed 2. Determine the relationship between experimental and theoretical probabilities by using the law of large numbers 3. Predict the relative frequency		

(experimental probability) of an event based on the (theoretical) probability		

Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observ
agreement is not good, explain possible sources of the discrepancy.

a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determ
For example, if a student is selected at random from a class, find the probability that Jane will be selected and the pr
selected.

Student Friendly/"I Can" statements	Resources	A
1. Recognize uniform (equally likely) probability. 2. Use models to determine the probability of events 3. Develop a uniform probability model and use it to determine the probability of each outcome/event.		

b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chanc
the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end d
the spinning penny appear to be equally likely based on the observed frequencies?

Student Friendly/"I Can" statements	Resources	A
1. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. 2. Analyze a probability model and justify why it is uniform or explain the discrepancy if it is not.		

Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in th
the compound event occurs.

Student Friendly/"I Can" statements	Resources	A
1. Define and describe a compound event. 2. Know that the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.		

b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. F
everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the even

Student Friendly/"I Can" statements	Resources	A
1. Choose the appropriate method such as organized lists, tables and tree diagrams to represent sample spaces for compound events 2. Find probabilities of compound events using organized lists, tables, tree diagrams, etc. and analyze the outcomes. 3. Identify the outcomes in the sample space for an everyday event.		

c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a si*
approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take
with type A blood?

Student Friendly/"I Can" statements	Resources	A
1. Define simulation. 2. Design and use a simulation to generate frequencies for compound events.		

Ratios and Proportional Relationships

• Analyze proportional relationships and use them to solve real-world and mathematical problems.

Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measur
For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles miles per hour.

Student Friendly/"I Can" statements	Resources	A
1. Compute unit rates associated with ratios of fractions in like or different units.	http://nlvm.usu.edu	

Recognize and represent proportional relationships between quantities.

a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or plane and observing whether the graph is a straight line through the origin.

Student Friendly/"I Can" statements	Resources	A
1. Know that a proportion is a statement of equality between two ratios. 2. Analyze two ratios to determine if they are proportional to one another with a variety of strategies. (e.g. using tables, graphs, pictures, etc.)		

b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions relationships.

Student Friendly/"I Can" statements	Resources	A
1. Define constant of proportionality as a unit rate. 2. Analyze tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships to identify the constant of proportionality.		

c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of it constant price p, the relationship between the total cost and the number of items can be expressed as t = pn*.

Student Friendly/"I Can" statements	Resources	A
1. Represent proportional relationships by writing equations.		

d. Explain what a point *(x, y)* on the graph of a proportional relationship means in terms of the situation, with specia 0) and (1, *r)* where *r* is the unit rate.

Student Friendly/"I Can" statements	Resources	A
1. Recognize what (0, 0) represents on the		

graph of a proportional relationship. 2. Recognize what (1, *r*) on a graph represents, where *r* is the unit rate. 3. Explain what the points on a graph of a proportional relationship means in terms of a specific situation.		

Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markup gratuities and commissions, fees, percent increase and decrease, percent error.*

Student Friendly/"I Can" statements	Resources	A
1. Recognize situations in which percentage proportional relationships apply. 2. Apply proportional reasoning to solve multistep ratio and percent problems, *e.g., simple interest, tax, markups, markdowns, gratuities, commissions, fees, percent increase and decrease, percent error, etc.*		

Geometry

• Draw, construct and describe geometrical figures and describe the relationships between them.

Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a s
reproducing a scale drawing at a different scale.

Student Friendly/"I Can" statements	Resources	A
1. Use ratios and proportions to create scale drawing 2. Identify corresponding sides of scaled geometric figures 3. Compute lengths and areas from scale drawings using strategies such as proportions. 4. Solve problems involving scale drawings of geometric figures using scale factors. 5. Reproduce a scale drawing that is proportional to a given geometric figure using a different scale.	http://nlvm.usu.edu mathopenref Cut-the-Knot Graph paper	

Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on c
three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle

Student Friendly/"I Can" statements	Resources	A
1. Know which conditions create unique triangles, more than one triangle, or no triangle. 2. Analyze given conditions based on the three measures of angles or sides of a triangle to determine when there is a unique triangle, more than one triangle, or no triangle. 3. Construct triangles from three given angle measures to determine when there is a unique triangle, more than one triangle or no triangle using appropriate tools (freehand, rulers, protractors, and technology).	Dot paper Graph paper Ruler Protractor	

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

Student Friendly/"I Can" statements	Resources	A
1. Define slicing as the cross-section of a 3D figure. 2. Describe the two-dimensional figures that result from slicing a three-dimensional figure such as a right rectangular prism or pyramid. 3. Analyze three-dimensional shapes by examining two dimensional cross-sections.		

• Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal deriv
between the circumference and area of a circle.

Student Friendly/"I Can" statements	Resources	A
1. Know the parts of a circle including radius, diameter, area, circumference, center, and chord. 2. Identify Pi. 3. Know the formulas for area and circumference of a circle 4. Given the circumference of a circle, find its area. 5. Given the area of a circle, find its circumference. 6. Justify that Pi can be derived from the circumference and diameter of a circle. 7. Apply circumference or area formulas to solve mathematical and real-world problems 8. Justify the formulas for area and circumference of a circle and how they relate to π 9. Informally derive the relationship between circumference and area of a circle.	http://nlvm.usu.edu	

Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and s
unknown angle in a figure.

Student Friendly/"I Can" statements	Resources	A
1. Identify and recognize types of angles: supplementary, complementary, vertical, adjacent. 2. Determine complements and supplements of a given angle. 3. Determine unknown angle measures by writing and solving algebraic equations based on relationships between angles.		

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

Student Friendly/"I Can" statements	Resources	A
1. Know the formulas for area and volume and then procedure for finding surface area and when to use them in real-world and math problems for two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. 2. Solve real-world and math problems involving area, surface area and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.		