Estell Manor Wildcats

Curriculum

Math
Grade 7

BOE Approved: September 2022

Estell Manor School District

Michelle Cappelluti, Chief School Administrator
Sarah Foley, Supervisor of Curriculum and Instruction
Rose Millar, Business Administrator

Board of Education
Mrs. Kathy Mimler - President
Mrs. Sarah Ferrari - Vice President
Mrs. Alicia Gray
Mr. Justin Roxas
Mrs. Shelly Sack

Acknowledgments:
The following individuals are acknowledged for their assistance in the preparation of this curriculum:
Mrs. Elaine Baker

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Financial Literacy Summary

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Accommodations and Modifications for students at risk of failing:

Estell Manor School

This document reflects the collaboration of teachers, staff, students, parents, and the Board of Education to define our mission to guide our work.

Our Mission:

Supported by home and community, Estell Manor School is to be a model of excellence in developing all students academically, emotionally, physically, and socially; thus empowering students to become lifelong learners who compete in and contribute to a global society.

This curricula and accompanying instructional materials have been developed to align with the NJSLS and in accordance with the NJ Department of Education's guidelines to include: Curriculum designed to meet grade level expectations, integrated accommodations and modifications for students with IEPs, 504s, ELLs, and gifted and talented students, assessments including benchmarks, formative, summative, and alternative assessments, a list of core instructional and supplemental materials, pacing guide, interdisciplinary connections, integration of 21st century skills, integration of technology, and integration of 21st Century Life and Career standards.

About the Standards

In 1996, the New Jersey State Board of Education adopted the state's first set of academic standards called the Core Curriculum Content Standards. The standards described what students should know and be able to do upon completion of a thirteen-year public school education. Over the last twenty years, New Jersey's academic standards have laid the foundation for local district curricula that are used by teachers in their daily lesson plans.

Revised every five years, the standards provide local school districts with clear and specific benchmarks for student achievement in nine content areas. Developed and reviewed by panels of teachers, administrators, parents, students, and representatives from higher education, business, and the community, the standards are influenced by national standards, research-based practice, and student needs. The standards define a "Thorough and Efficient Education" as guaranteed in 1875 by the New Jersey Constitution. Currently the standards are designed to prepare our students for college and careers by emphasizing high-level skills needed for tomorrow's world.

The New Jersey Student Learning Standards include Preschool Teaching and Learning Standards, as well as nine K-12 standards for the following content areas: **21st Century Life and Careers, Comprehensive Health and Physical Education, English Language Arts, Mathematics, Science, Social Studies, Technology, Visual and Performing Arts, World Languages.** The most recent review and revision of the standards occurred in 2014. However, the standards in language arts and math underwent an additional review in 2015 with adoption by the New Jersey State Board of Education in May 2016.

Estell Manor School
Math: 7th grade

Pacing Guide

Course Title: Math	Grade level: 7th grade

Topic	Unit of Study	Topic	Unit of Study
1	Integers and Rational Numbers: 26 days	5	Solve Problems Using Equations and Inequalities: 19 days
2	Analyze and Use Proportional Relationships: 17 days	6	Use Sampling to Draw inferences about Populations: 12 days
3	Analyze and Solve Percent Problems: 17 days	7	Probability: 19 days
4	Generate Equivalent Expressions: 21 days	8	Solve Problems Involving Geometry: 25 days

Instruction Materials/Additional Resources:
Math 5-8/Algebra/EnVision 2.0 Math/Scott Foresman/2020
Classroom Manipulatives, EDC Calendar Math activities, GregTangMath.com, http://www.mathgoodies.com, http://www.funbrain.com, http://www.mathplayground.com, http://www.mathsisfun.com, http://www.gamequarium.com, http://www.vestorkids.com, http://www.mathwire.com, http://go-el.com, https://www.edmentum.com/

Estell Manor School 7th grade Math Curriculum Overview	
Content Area: Math Topic 1	Topic 1: 26 Days
Unit Title: Integers and Rational Numbers	
Grade Level: 7th	
NJSLS Addressed: 7.NS.A, 7.NS.1, 7.NS.1.a, 7.NS.1.b, 7.NS.1.c, 7.NS.2, 7.NS.2.a, 7.NS.2.b, 7.NS.2.c, 7.NS.3, 7.EE.B.3	

- 7.NS.A Apply and extend previous understandings of operations and fractions.
- 7.NS.1: Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
- 7.NS.1.a: Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.
- 7.NS.1.b: Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
- 7.NS.1.c: Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
- 7.NS.2: Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
- 7.NS.2.a: Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
- 7.NS.2.b: Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real- world contexts.
- 7.NS.2.c: Apply properties of operations as strategies to multiply and divide rational numbers.
- 7.NS.3: Solve real-world and mathematical problems involving the four operations with rational numbers.
- 7.EE.B.3: 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. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

Topic 1 Summary

Essential Questions:

- How do operations with integers relate to the same operations with rational numbers?
- How can you determine the correct operation to use to solve problems?

Enduring Understandings:

- An integer and its opposite are the same distance from 0 on a number line.
- Rational numbers expressed as fractions can be written in decimal form.
- Adding integers requires adding or subtracting their absolute values and understanding the sign of the sum.
- Subtracting is the same as adding that number's inverse.
- The sign of a product and quotient is determined by the signs of the factors.
- Problems involving rational numbers can be solved by making sense of the quantities and their relationship to each other.

Learning Targets

Students will be able to understand:

- 1-1 Relate integers and their opposites
- 1-2 Understand rational numbers
- 1-3 Add Integer
- 1-4 Subtract Integers
- 1-5 Add and Subtract Rational Numbers
- 1-6 Multiply Integers
- 1-7 Multiply Rational Numbers
- 1-8 Divide Integers
- 1-9 Divide Rational Numbers
- 1-10 Solve Problems Involving Rational Numbers

Students will be able to demonstrate:

- How integers and their opposites are related
- Identify rational numbers and write them in decimal form.
- Add positive and negative integers
- Understand subtraction of integers as the additive inverse
- Use properties of operations to add and subtract rational numbers
- Apply integer multiplication to real life applications
- Find the product of rational numbers
- Determine equivalencies among integer quotients
- Decide which operations to use to solve problems when working with integers

Integrated Modifications: ● One to one technology ● Students work at own pace on lessons ● Small group instruction (teachers pulls back if students need help) ● Peer to peer help ● Leveled groups	
Content Area: Math Topics 2	Topic 2: 17 days
Unit Title: Ratios and Proportional Relationships	
Grade Level: 7th	
NJSLS Addressed: 7.RP.A, 7.RP.1, 7.RP.2, 7.RP.2.a, 7.RP.2.b	
● 7.RP.A Analyze proportional relationships and use them to solve real-world and mathematical problems. ● 7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. ● 7.RP.2: Recognize and represent proportional relationships between quantities. ● 7.RP.2.a: Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. ● 7.RP.2.b: Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. 7.RP.2.c: Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.	

Topic 2 Summary

Essential Questions:

- How can you recognize and represent proportional relationships and use them to solve problems?

Enduring Understandings:

- Equivalent ratios and rates can be used to compare and solve problems.
- A unit rate can be easier to use to solve a problem than a ratio of fractions
- Quantities in proportional relationships can be described as equivalent ratios
- Equations in the form of y=kx where k is the constant of proportionality, can be used to represent proportional relationships and solve problems.
- The graph of a proportional relationship is a straight line through the origin.

Learning Targets

Students will be able to understand:

- 2-1 Connect Ratios, Rates, and Unit Rates
- 2-2 Determine Unit Rates with Ratios of Fractions
- 2-3 Understand Proportional Relationships: Equivalent Ratios
- 2-4 Describe Proportional Relationships: Constant of Proportionality
- 3-Act Mathematical Modeling
- 2-5 Graph Proportional Relationships
- 2-6 Apply Proportional Reasoning to Solve Problems

Students will be able to demonstrate:

- Use ratios and rates to describe between two quantities
- Find unit rates and use unit rates to solve multi-step problems
- Determine whether two quantities are proportional
- Use equations to solve problems involving proportional relationships.
- Use mathematical modeling to represent a problem situation and to propose a solution
- Use a graph to represent proportionality
- Interpret a point on a graph of a proportional relationship.

Integrated Modifications:

- One to one technology
- Students work at own pace on lessons
- Small group instruction (teachers pulls back if students need help)
- Peer to peer help
- Leveled groups

Content Area: Math Topic 3	Topic 3: 17 days
Unit Title: Ratios and Proportional Relationships	
Grade Level: 7th grade	
NJSLS Addressed: 7.RP.A, 7.RP.2, 7.RP.2.a, 7.RP.2.b, 7.RP.2.c, 7.RP.3	

- 7.RP.A Analyze proportional relationships and use them to solve real-world and mathematical problems.
- 7.RP.2: Recognize and represent proportional relationships between quantities.
- 7.RP.2.a: Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
- 7.RP.2.b: Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
- 7.RP.2.c: Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.
- 7.RP.3: Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

Topic 3 Summary

Essential Questions:

- How can percents show proportional relationships between quantities and be used to solve problems?

Enduring Understandings:

- Equivalent ratios can be used to find the percent of a number.
- Percent is a ratio out of 100.
- The part divided by the whole and the percent divided by 100 are equivalent ratios.
- Proportional reasoning can be used to develop the percent equation.
- The percent change and percent error involve finding the ratio of a difference of two values to one of those values.
- A markup is the same as a percent increase and a markdown is the same as a percent decrease.
- Each value in the annual simple interest formula corresponds to a value in the percent equation.

Learning Targets

Students will be able to understand:

- 3-1 Analyze Percents of Numbers
- 3-2 Connect Percent and Proportion
- 3-3 Represent and Use the Percent Equation
- 3-4 Solve Percent Change and Percent Error Problems
- 3-5 Solve Markup and Markdown Problems
- 3-6 Solve Simple Interest Problems

Students will be able to demonstrate:

- That equivalent rates can be used to find percents
- Use a percent proportion to find and unknown part, whole, or percent
- Interpret the results of a percent equation in a real life scenario.
- Solve real word problems involving percent change and percent error
- Understand and calculate markup and markdowns.
- Understand what simple interest is and how it is calculated

Integrated Modifications:

- One to one technology
- Students work at own pace on lessons
- Small group instruction (teachers pulls back if students need help)
- Peer to peer help
- Leveled groups

Content Area: Math Topic 4	Topic 4: 21 days
Unit Title: Generate Equivalent Expressions	
Grade Level: 7th	
NJSLS Addressed: 7.EE.A, 7.EE.1, 7.EE.2, 7.EE.4, 7.EE.4.a, 7.EE.4.b	

- 7.EE.A Use properties of operations to generate equivalent expressions.
- 7.EE.1: Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.7.EE.2: Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, a + 0.05a = 1.05a means that “increase by 5%” is the same as “multiply by 1.05.”
- 7.EE.2: Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.
- 7.EE.4: Use variables to represent quantities in a real- world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
- 7.EE.4.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 rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, 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?
- 7.EE.4.b: 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. Graph the solution set of the inequality and interpret it in the context of the problem.

Topic 4 Summary

Essential Questions:

- How can properties of operations help to generate equivalent expressions that can be used in solving problems?

Enduring Understandings:

- Algebraic expressions can be used to represent and solve problems in real-world contexts.
- Rearranging or combining like terms does not change the value of an expression.
- All like terms must be combined in order for expressions to be simplified.
- Expanded expressions represent an equivalent way to represent the original expression.
- The Distributive Property and common factors are used to factor expressions.
- The same rules apply for coefficients and constants when adding expressions.
- Add the inverse when subtracting expressions.
- Understanding mathematical structure is important for solving deeper, unconventional expressions.

Learning Targets

Students will be able to understand:

- 4-1 Write and Evaluate Algebraic Expressions
- 4-2 Understand Linear Expressions
- 4-3 Simplify Linear Expressions
- 4-4 Expand Linear Expressions
- 4-5 Factor Linear Expressions
- 4-6 Add Linear Expressions
- 4-7 Subtract Linear Expressions
- 4-8 Analyze Equivalent Expressions

Students will be able to demonstrate:

- Understand how variables are used to represent unknown values in problems
- Recognize when two expressions are equivalent
- Combine like terms in an expression
- Use the Distributive Property to expand expressions
- Understand factoring and expanding expressions are inverse
- Model addition of expressions in real-life applications
- Write equivalent expressions to show how quantities are related in real-life applications

Integrated Modifications: ● One to one technology ● Students work at own pace on lessons ● Small group instruction (teachers pulls back if students need help) ● Peer to peer help ● Leveled groups	
Content Area: Math Topic 5	Topic 5: 19 days
Unit Title: Solve Problems Using Equations and Inequalities	
Grade Level: 7th	
NJSLS Addressed: 7.EE.B, 7.EE.3, 7.EE.4, 7.EE.4a, 7.EE.4b	
● 7.EE.B Solve real-life and mathematical problems using numerical and algebraic expressions and equations. ● 7.EE.3: 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. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. ● 7.EE.4: Use variables to represent quantities in a real- world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. ● 7.EE.4.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 rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, 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? ● 7.EE.4.b: 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. Graph the solution set of the inequality and interpret it in the context of the problem.	

Topic 5 Summary

Essential Questions:

- How can you solve real-world and mathematical problems with numerical and algebraic equations and inequalities?

Enduring Understandings:

- Equations with more than one operation can be used to represent a situation
- One and two step problems are both solved using the properties of equality
- The Distributive Property can be used to solve equations in the from p(x+q)=r
- Solving inequalities with addition and subtraction is the same as solving equations.
- When solving inequalities with multiplication or division, when multiplying or dividing by a negative value, the inequality symbol is reversed.
- To solve a multi-step inequality, add or subtract the constant, then multiply or divide to isolate the variable.

Learning Targets

Students will be able to understand:

- 5-1 Write Two-Step Equations
- 5-2 Solve Two-Step Equations
- 5-3 Solve Equations Using the Distributive Property
- 5-4 Solve Inequalities Using Addition or Subtraction
- 5-5 Solve Inequalities Using Multiplication or Division 3-Act Mathematical Modeling
- 5-6 Solve Two-Step Inequalities
- 5-7 Solve Multi-Step Inequalities

Students will be able to demonstrate:

- Analyze word problems to write two-step equations.
- Use models to solve two-step equations.
- Solve equations using the distributive property.
- Graph the solution of inequalities on a number line.
- Test and verify the appropriateness of mathematical models.
- Write and solve a two-step inequality to solve a problem. Apply the Distributive Property to simplify and solve multi-step inequalities.

Integrated Modifications:

- One to one technology
- Students work at own pace on lessons
- Small group instruction (teachers pulls back if students need help)
- Peer to peer help
- Leveled groups

Content Area: Math Topic 6	Topic 6: 12 days
Unit Title: Use Sampling to Draw inferences about Populations	
Grade Level: 7th	
NJSLS Addressed: 7.SP.A, 7.SP.B, 7.EE.B, 7.RP.A	

- 7.SP.A.1: Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
- 7.SP.A.2: Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples)of the same size to gauge the variation in estimates or predictions.
- 7.SP.B.3: Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.
- 7.SP.B.4: Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.
- 7.EE.B.3: 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. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.
- 7.RP.A.2c: Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.
- 7.RP.A.3: Use proportional relationships to solve multistep ratio and percent problems.

Topic 6 Summary	
Essential Questions: ● How can sampling be used to draw inferences about one or more populations?	Enduring Understandings: ● Representative samples must reflect the entire population. ● Data from ransom samples can be used to make valid inferences about a population by looking for patterns or trends in the distribution of the data. ● Data displays can be used to make informal comparative inferences about two populations. ● You can use dot plots to compare populations based on measures of center and variability. ● You can use statistical measures such as mean and MAD to make inferences and predictions about populations.
Learning Targets	
Students will be able to understand: ● 6-1 Populations and Samples ● 6-2 Draw Inferences About Populations ● 6-3 Make Comparative Inferences about Populations ● 6-4 Compare Populations Using Data Displays ● 6-5 Compare Populations Using Statistical Measures ● 3- Act Mathematical Modeling	Students will be able to demonstrate: ● Distinguish between a population and a sample. ● Make qualitative and quantitative inferences from a data set. ● Use box plots to compare and make inferences about populations. ● Use the mode, range, mean, and mean absolute absolute deviation (MAD) to compare populations.
Integrated Modifications: ● One to one technology ● Students work at own pace on lessons ● Small group instruction (teachers pulls back if students need help) ● Peer to peer help ● Leveled groups	
Content Area: Math Topic 7	Topic 7: 19 days

Unit Title: Probability

Grade Level: 7th

NJSLS Addressed: 7.SP.C, 7.SP.5, 7.SP.6, 7.SP.7, &.SP.7a, &.SP.7b, &.SP.8, 7.SP.8.a, 7.SP.8.b, 7.SP.8.c, 7.EE.3, 7.EE.4, 7.EE.4.a

- 7.SP.C Investigate chance processes and develop, use, and evaluate probability models.
- 7.SP.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely or likely, and a probability near 1 indicates a likely event.
- 7.SP.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
- 7.SP.7: Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
- 7.SP.7.a: Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events
- 7.SP.7.b: Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.
- 7.SP.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
- 7.SP.8.a: Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
- 7.SP.8.b: Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.
- 7.SP.8.c: Design and use a simulation to generate frequencies for compound events. For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?
- 7.EE.3: 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. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.
- 7.EE.4: Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
- 7.EE.4.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 rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, 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?

Topic 7 Summary

Essential Questions:

- How can you investigate chance processes and develop, use, and evaluate probability models?

Enduring Understandings:

- Probability is the likelihood an event will occur.
- Probability can be described using a ration such as 1 out of 2. The closer the ratio is to 0, the less likely it is to occur.
- Theoretical probability of an event is the number of favorable outcomes divided by the number of all possible outcomes, when all outcomes are equally likely.
- Theoretical probability is calculated based on an equation. Experimental probability consists of results of an actual experiment.
- The possible outcomes of a compound event can be represented using a tree diagram, a table, or an organized list.
- A model, such as a table, organized list, or tree diagram, can represent the sample space of a compound event. The sample space can then be used to determine the probability of a favorable outcome.

Learning Targets

Students will be able to understand:

- 7-1 Understand Likelihood and Probability
- 7-2 Connect Relative Frequency and Experimental Probability
- 7-3 Represent Sample Spaces
- 7-4 Find Probabilities of Simple Events
- 3-Act Mathematical Modeling
- 7-5 Determine Outcomes of Compound Events
- 7-6 Find Probabilities of Compound Events
- 7-7 Simulate Compound Events

Students will be able to demonstrate:

- Use probability to describe the likelihood that an event will occur.
- Understand theoretical probability and how it can be used.
- Compare theoretical and experimental probability.
- Explain differences between theoretical and experimental probability.
- Develop a probability model and use it to evaluate a situation.
- Use a tree diagram, a table, or an organized list to represent the sample space for a compound event.
- Find the probability of a compound event.

Integrated Modifications: ● One to one technology ● Students work at own pace on lessons ● Small group instruction (teachers pulls back if students need help) ● Peer to peer help ● Leveled groups	
Content Area: Math Topic 8	Topic 8: 25 days
Unit Title: Solve Problems Involving Geometry	
Grade Level: 7th	
NJSLS Addressed: 7.G.A, 7.G.B, 7.G.1, 7.G.2, 7.G.3, 7.G.4, 7.G.5, 7.G.6, 7.EE.4, 7.EE.4.a, 7.EE.4.b, 7.NS.3	
● 7.G.A: Draw, construct, and describe geometrical figures and describe the relationships between them. ● 7.G.B: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. ● 7.G.1: Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. ● 7.G.2: Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. ● 7.G.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. ● 7.G.4: Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. ● 7.G.5: Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. ● 7.G.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 ● 7.EE.4: Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. ● 7.EE.4.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 rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, 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?

- 7.EE.4.b: 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. Graph the solution set of the inequality and interpret it in the context of the problem.
- 7.NS.3: Solve real-world and mathematical problems involving the four operations with rational numbers.

Topic 8 Summary

Essential Questions:

- How can geometry be used to solve problems?

Enduring Understandings:

- Use a scale drawing to calculate measurements and reproduce proportional scale drawings.
- The formula for the area of a circle can be used to solve problems by substituting the known values and solving for the unknown value. A cross-section is a two dimensional figure that is exposed when a three dimensional figure is sliced by a plane.
- The ratio of a circle's circumference and diameter is constant regardless of size and it is always pi.
- The surface area of a composite figure is the sum of the areas of its surfaces.
- To find the volume of a prism, multiply the area of its base by its height.

Learning Targets

Students will be able to understand:

- 8-1 Solve Problems Involving Scale Drawings
- 8-2 Draw Geometric Figures
- 8-3 Draw Triangles with Given Conditions
- 8-4 Solve Problems using Angle Relationships
- 8-5 Solve Problems Involving Circumference of a Circle
- 8-6 Solve Problems Involving Area of a Circle
- 8-7 Describe Cross Section
- 8-8 Solve Problems Involving Surface Area
- 8-9 Solve Problems Involving Volume

Students will be able to demonstrate:

- Use a scale drawing as a representation of actual lengths and area
- Name and classify quadrilaterals according to their properties
- Construct triangles with given conditions
- Calculate the measures of angles by using angle relationships
- Calculate the circumference, radius, or diameter of a circle.
- Calculate the area of a circle
- Use mathematical modeling to represent a problem situation and to propose a solution
- Describe cross sections of right rectangular prisms and pyramids
- Find the surface area of two-dimensional composite shapes
- Calculate the volume of various three-dimensional figures

Integrated Modifications: ● One to one technology ● Students work at own pace on lessons ● Small group instruction (teachers pulls back if students need help) ● Peer to peer help ● Leveled groups	
Content Area: Financial Literacy	Financial Literacy
Unit Title: Financial Literacy	
Grade Level: 7th	
NJSLS Addressed: 9.1.8.A.1 - 9.1.8.A.7, 9.1.8.B.1 - 9.1.8.B.11	
● 9.1.8.A.1 - Explain the meaning and purposes of taxes and tax deductions and why fees for various benefits (e.g., medical benefits) are taken out of pay. ● 9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income. ● 9.1.8.A.3 - Differentiate among ways that workers can improve earning power through the acquisition of new knowledge and skills. ● 9.1.8.A.4 - Relate earning power to quality of life across cultures. ● 9.1.8.A.5 - Relate how the demand for certain skills determines an individual's earning power. ● 9.1.8.A.6 - Explain how income affects spending decisions. ● 9.1.8.A.7 - Explain the purpose of the payroll deduction process, taxable income, and employee benefits. ● 9.1.8.B.1 - Distinguish among cash, check, credit card, and debit card. ● 9.1.8.B.2 - Construct a simple personal savings and spending plan based on various sources of income. ● 9.1.8.B.3 - Justify the concept of "paying yourself first" as a financial savings strategy. ● 9.1.8.B.4 - Relate the concept of deferred gratification to [investment,] meeting financial goals, and building wealth. ● 9.1.8.B.5 - Explain the effect of the economy on personal income, individual and family security, and consumer decisions. ● 9.1.8.B.6 - Evaluate the relationship of cultural traditions and historical influences on financial practice. ● 9.1.8.B.7 - Construct a budget to save for long-term, short-term, and charitable goals. ● 9.1.8.B.8 - Develop a system for keeping and using financial records. ● 9.1.8.B.9 - Determine the most appropriate use of various financial products and services (e.g., ATM, debit cards, credit cards, check books). ● 9.1.8.B.10 - Justify safeguarding personal information when using credit cards, banking electronically, or filing forms. ● 9.1.8.B.11 - Evaluate the appropriate financial institutions to assist with meeting various personal financial needs and goals. ● 9.1.8.C.1 - Compare and contrast credit cards and debit cards and the advantages and disadvantages of using each. ● 9.1.8.C.2 - Compare and contrast the financial products and services offered by different types of financial institutions.	

- 9.1.8.C.3 - Compare and contrast debt and credit management strategies.
- 9.1.8.C.4 - Demonstrate an understanding of the terminology associated with different types of credit (e.g., credit cards, installment loans, mortgages) and compare the interest rates associated with each.
- 9.1.8.C.5 - Calculate the cost of borrowing various amounts of money using different types of credit (e.g., credit cards, installment loans, mortgages).
- 9.1.8.C.6 - Determine ways to leverage debt beneficially.
- 9.1.8.C.7 - Determine potential consequences of using “easy access” credit (e.g., using a line of credit vs. obtaining a loan for a specific purpose).
- 9.1.8.C.8 - Explain the purpose of a credit score and credit record, and summarize borrowers’ credit report rights.
- 9.1.8.C.9 - Summarize the causes and consequences of personal bankruptcy.
- 9.1.8.C.10 - Determine when there is a need to seek credit counseling and appropriate times to utilize it.
- 9.1.8.D.1 - Determine how saving contributes to financial well-being.
- 9.1.8.D.2 - Differentiate among various savings tools and how to use them most effectively.
- 9.1.8.D.3 - Differentiate among various investment options.
- 9.1.8.D.4 - Distinguish between income and investment growth.
- 9.1.8.D.5 - Explain the economic principle of supply and demand.
- 9.1.8.E.1 - Explain what it means to be a responsible consumer and the factors to consider when making consumer decisions.
- 9.1.8.E.2 - Identify personal information that should not be disclosed to others and the possible consequences of doing or not doing so.
- 9.1.8.E.3 - Compare and contrast product facts versus advertising claims.
- 9.1.8.E.4 - Prioritize personal wants and needs when making purchases.
- 9.1.8.E.5 - Analyze interest rates and fees associated with financial services, credit cards, debit cards, and gift cards.
- 9.1.8.E.6 - Compare the value of goods or services from different sellers when purchasing large quantities and small quantities.
- 9.1.8.E.7 - Evaluate how fraudulent activities impact consumers, and justify the creation of consumer protection laws.
- 9.1.8.E.8 - Recognize the techniques and effects of deceptive advertising
- 9.1.8.F.1 - Explain how the economic system of production and consumption may be a means to achieve significant societal goals.
- 9.1.8.F.2 - Examine the implications of legal and ethical behaviors when making financial decisions.
- 9.1.8.F.3 - Relate the impact of business, government, and consumer fiscal responsibility to the economy and to personal finance.
- 9.1.8.G.1 - Explain why it is important to develop plans for protecting current and future personal assets against loss.
- 9.1.8.G.2 - Determine criteria for deciding the amount of insurance protection needed.
- 9.1.8.G.3 - Analyze the need for and value of different types of insurance and the impact of deductibles.
- 9.1.8.G.4 - Evaluate the need for different types of extended warranties.

Financial Literacy Summary

Essential Questions:

- Why is personal financial planning important?
- What are the components of a financial plan?
- What is involved in financial decision making?
- Why is a budget such a key component of the financial plan?
- What is involved in choosing a career and applying for a job in that career path?
- Why is paying taxes important and how does it affect an individual's financial plan?
- Why is insurance an important part of a financial plan?
- Why is an understanding of economic conditions important to your financial plan?
- Why is it important to build and maintain healthy credit?
- How do personal loans and purchasing decisions affect your financial plan?
- How can people use a credit card correctly and to their advantage?
- Why is balancing your checking account an important part of your financial plan?
- How can you begin saving for your future now?
- Why would you invest and how does investing affect your financial plan?
- How does planning for retirement affect a person's financial plan?

Enduring Understandings:

- Analyze the benefits of good financial decision making.
- Identify the key components of a financial plan.
- Differentiate between cash inflow and cash outflow.
- Understand the importance of budgeting in your financial plan.
- Discuss how one can gain the skills needed for a career choice.
- Discuss the purpose and process of filing tax returns.
- Discuss the ways people obtain insurance.
- Understand how demographic changes will impact your future.
- Identify the ways to protect your identity.
- Discuss the unique issues and challenges of financing an education.
- Describe different credit card features.
- Describe the two major federal insurers.
- Explore the ways in which savings can earn interest.
- Understand the reasons for investing.
- Explain the role of diversification in managing an investment portfolio.

Learning Targets

Students will be able to understand:

- 1. Overview of Personal Finance
- 2. The Financial Plan
- Financial Decision Making
- 4. Budgets and Balance Sheets
- 5. Careers and Education
- 6. Paying Taxes
- 7. Insuring Your Health and Life
- 8. The Economy and You
- 9. Obtaining and Protecting Your Credit

Students will be able to demonstrate:

- Financial planning including:
  - Budgeting and balancing
  - Choosing a career
  - Taxes
  - Insurance
  - Higher Education
  - Credit and credit cards

• 10. Personal Loans and Purchasing Decisions • 11. Credit Cards and Other Forms of Credit • 12. Banking Procedures and Services • 13. Methods of Saving • 14. Methods of Investing • 15. Planning for the Future	
Integrated Modifications: • One to one technology • Students work at own pace on lessons • Small group instruction (teachers pulls back if students need help) • Peer to peer help	

Assessments	
Benchmark: ● EnVision End of Unit Assessments Formative: Formative Assessment's goal is to monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning. ● Drawing a concept map to represent understanding of a topic ● Classroom polls ● Exit tickets ● Turning in assignment for early feedback ● One minute papers Summative: Summative Assessments' goal is to evaluate students' learning at the end of an instructional unit by comparing it against some standard or benchmark. ● End of Unit or Chapter Test ● End of Course Assessment ● A final project or paper ● Standardized Test	Alternative Assessments: ● Teacher Observations ● Patterns ● Collage ● Paint By Number ● Crossword Puzzle ● Calendar

Interdisciplinary Connections:

- Language Arts, Art & Science

21st Century Life & Career Skills Standards

(State 21st century themes here). Link http://www.state.nj.us/education/cccs/2014/career/

21st Century Life and Career Standards	21st Century Career Ready Practices
9.1.8.A.4 Relate earning power to quality of life across cultures. 9.1.8.A.5 Relate how the demand for certain skills determines an individual's earning power. 9.1.8.B.4 Relate the concept of deferred gratification to [investment,] meeting financial goals, and building wealth. 9.1.8.B.5 Explain the effect of the economy on personal income, individual and family security, and consumer decisions. 9.1.8.D.1 Determine how saving contributes to financial well-being. 9.1.8.E.1 Explain what it means to be a responsible consumer and the factors to consider when making consumer decisions. 9.1.8.E.2 Identify personal information that should not be disclosed to others and the possible consequences of doing or not doing so. 9.1.8.E.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career 9.1.8.E.4 Prioritize personal wants and needs when making purchases. 9.2.8.B.1 Research careers within the 16 Career Clusters® and determine attributes of career success. 9.2.8.B.2 Develop a Personalized Student Learning Plan with the assistance of an adult mentor that includes information about career areas of interest, goals and an educational plan. 9.2.8.B.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, homework, and extracurricular activities for use in a career. 9.2.8.B.7 Evaluate the impact of online activities and social media on employer decisions.	CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP3. Attend to personal health and financial well-being. CRP4. Communicate clearly and effectively and with reason. CRP5. Consider the environmental, social and economic impacts of decisions. CRP6. Demonstrate creativity and innovation. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP9. Model integrity, ethical leadership and effective management. CRP10. Plan education and career paths aligned to personal goals. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence.

Integration of Technology Standards https://www.state.nj.us/education/cccs/2014/tech/		
Content Area	Technology	
Standard	8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.	
Strand	A. Technology Operations and Concepts: *Students demonstrate a sound understanding of technology concepts, systems and operations.*	
Grade Level bands	Content Statement Students will:	Indicator
P	Understand and use technology systems.	8.1.P.A.1 Use an input device to select an item and navigate the screen
		8.1.P.A.2 Navigate the basic functions of a browser.
	Select and use applications effectively and productively.	8.1.P.A.3 Use digital devices to create stories with pictures, numbers, letters and words.
		8.1.P.A.4 Use basic technology terms in the proper context in conversation with peers and teachers (e.g., camera, tablet, Internet, mouse, keyboard, and printer).
		8.1.P.A.5 Demonstrate the ability to access and use resources on a computing device.
K-2	Understand and use technology systems.	8.1.2.A.1 Identify the basic features of a digital device and explain its purpose.

	Select and use applications effectively and productively.	8.1.2.A.2 Create a document using a word processing application.
		8.1.2.A.3 Compare the common uses of at least two different digital applications and identify the advantages and disadvantages of using each.
		8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
		8.1.2.A.5 Enter information into a spreadsheet and sort the information.
		8.1.2.A.6 Identify the structure and components of a database.
		8.1.2.A.7 Enter information into a database or spreadsheet and filter the information.
3-5	Understand and use technology systems.	8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
	Select and use applications effectively and productively.	8.1.5.A.2 Format a document using a word processing application to enhance text and include graphics, symbols and/ or pictures.
		8.1.5.A.3 Use a graphic organizer to organize information about a problem or issue.
		8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.
		8.1.5.A.5 Create and use a database to answer basic questions.

		8.1.5.A.6 Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data.
6-8	Understand and use technology systems.	8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools.
	Select and use applications effectively and productively.	8.1.8.A.2 Create a document (e.g. newsletter, reports, personalized learning plan, business letters or flyers) using one or more digital applications to be critiqued by professionals for usability.
		8.1.8.A.3 Use and/or develop a simulation that provides an environment to solve a real world problem or theory.
		8.1.8.A.4 Graph and calculate data within a spreadsheet and present a summary of the results
		8.1.8.A.5 Create a database query, sort and create a report and describe the process, and explain the report results.
Strand	B. Creativity and Innovation: *Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.*	
Grade Level bands	Content Statement Students will:	Indicator
P		8.1.P.B.1 Create a story about a picture taken by the student on a digital camera or mobile device.
K-2		8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.
3-5		8.1.5.B.1 Collaborative to produce a digital story about a significant local event or issue based on first-

		person interviews.
6-8		8.1.8.B.1 Synthesize and publish information about a local or global issue or event (ex. telecollaborative project, blog, school web).
Strand	C. Communication and Collaboration: *Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.*	
Grade Level bands	Content Statement	Indicator
P	Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. Communicate information and ideas to multiple audiences using a variety of media and formats. Develop cultural understanding and global awareness by engaging with learners of other cultures. Contribute to project teams to produce original works or solve problems.	8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.
K-2		8.1.2.C.1 Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.
3-5		8.1.5.C.1 Engage in online discussions with learners of other cultures to investigate a worldwide issue from multiple perspectives and sources, evaluate findings and present possible solutions, using digital tools and online resources for all steps.
6-8		8.1.8.C.1 Collaborate to develop and publish work that provides perspectives on a global problem for discussions with learners from other countries.
		8.1.12.C.1 Develop an innovative solution to a real world problem or issue in collaboration with peers and experts, and present ideas for feedback through social media or in an online community.
Strand	D. Digital Citizenship: *Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.*	

Grade Level bands	Content Statement	Indicator
K-2	Advocate and practice safe, legal, and responsible use of information and technology.	8.1.2.D.1 Develop an understanding of ownership of print and nonprint information.
3-5	Advocate and practice safe, legal, and responsible use of information and technology.	8.1.5.D.1 Understand the need for and use of copyrights.
		8.1.5.D.2 Analyze the resource citations in online materials for proper use.
	Demonstrate personal responsibility for lifelong learning.	8.1.5.D.3 Demonstrate an understanding of the need to practice cyber safety, cyber security, and cyber ethics when using technologies and social media.
	Exhibit leadership for digital citizenship.	8.1.5.D.4 Understand digital citizenship and demonstrate an understanding of the personal consequences of inappropriate use of technology and social media.
6-8	Advocate and practice safe, legal, and responsible use of information and technology.	8.1.8.D.1 Understand and model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics including appropriate use of social media.
	Demonstrate personal responsibility for lifelong learning.	8.1.8.D.2 Demonstrate the application of appropriate citations to digital content.
		8.1.8.D.3 Demonstrate an understanding of fair use and Creative Commons to intellectual property.
	Exhibit leadership for digital citizenship.	8.1.8.D.4 Assess the credibility and accuracy of digital content.
		8.1.8.D.5 Understand appropriate uses for social media and the negative consequences of misuse.

Strand	E: Research and Information Fluency: *Students apply digital tools to gather, evaluate, and use information.*	
Grade Level bands	Content Statement	Indicator
P	Plan strategies to guide inquiry.	8.1.P.E.1 Use the Internet to explore and investigate questions with a teacher's support.
K-2	Plan strategies to guide inquiry Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.	8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.
3-5	Plan strategies to guide inquiry. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.	8.1.5.E.1 Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.
6-8	Plan strategies to guide inquiry. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. Evaluate and select information sources and digital tools based on the appropriateness for specific tasks. Process data and report results.	8.1.8.E.1 Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.
Strand	F: Critical thinking, problem solving, and decision making: *Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.*	
Grade Level Bands	Content Statement	Indicator
K-2	Identify and define authentic problems and significant questions for investigation. Plan and manage activities to develop a solution or complete a	8.1.2.F.1 Use geographic mapping tools to plan and solve problems

	project. Collect and analyze data to identify solutions and/or make informed decisions. Use multiple processes and diverse perspectives to explore alternative solutions.	
3-5	Identify and define authentic problems and significant questions for investigation. Plan and manage activities to develop a solution or complete a project. Collect and analyze data to identify solutions and/or make informed decisions. Use multiple processes and diverse perspectives to explore alternative solutions	8.1.5.F.1 Apply digital tools to collect, organize, and analyze data that support a scientific finding.
6-8	Identify and define authentic problems and significant questions for investigation. Plan and manage activities to develop a solution or complete a project. Collect and analyze data to identify solutions and/or make informed decisions. Use multiple processes and diverse perspectives to explore alternative	8.1.8.F.1 Explore a local issue, by using digital tools to collect and analyze data to identify a solution and make an informed decision.

Content Area	Technology
Standard	8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.
Strand	A. The Nature of Technology: Creativity and Innovation *Technology systems impact every aspect of the world in which we live.*

Grade Level bands	Content Statement	Indicator	Indicator
K-2	The characteristics and scope of technology.	8.2.2.A.1	Define products produced as a result of technology or of nature.
		8.2.2.A.2	Describe how designed products and systems are useful at school, home and work.
	The core concepts of technology.	8.2.2.A.3	Identify a system and the components that work together to accomplish its purpose.
		8.2.2.A.4	Choose a product to make and plan the tools and materials needed.
	The relationships among technologies and the connections between technology and other fields of study.	8.2.2.A.5	Collaborate to design a solution to a problem affecting the community.
3-5	The characteristics and scope of technology.	8.2.5.A.1	Compare and contrast how products made in nature differ from products that are human made in how they are produced and used.
		8.2.5.A.2	Investigate and present factors that influence the development and function of a product and a system.
	The core concepts of technology.	8.2.5.A.3	Investigate and present factors that influence the development and function of products and systems, e.g., resources, criteria and constraints.

	The relationships among technologies and the connections between technology and other fields of study.	8.2.5.A.4	Compare and contrast how technologies have changed over time due to human needs and economic, political and/or cultural influences.
		8.2.5.A.5	Identify how improvement in the understanding of materials science impacts technologies.
6-8	The characteristics and scope of technology.	8.2.8.A.1	Research a product that was designed for a specific demand and identify how the product has changed to meet new demands (i.e. telephone for communication - smart phone for mobility needs).
	The core concepts of technology.	8.2.8.A.2	Examine a system, consider how each part relates to other parts, and discuss a part to redesign to improve the system.
		8.2.8.A.3	Investigate a malfunction in any part of a system and identify its impacts.
	The relationships among technologies and the connections between technology and other fields of study.	8.2.8.A.4	Redesign an existing product that impacts the environment to lessen its impact(s) on the environment.
		8.2.8.A.5	Describe how resources such as material, energy, information, time, tools, people, and capital contribute to a technological product or system.

Content Area	Technology

Standard	8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.
Strand	B. Technology and Society: *Knowledge and understanding of human, cultural and societal values are fundamental when designing technological systems and products in the global society.*

Grade Level bands	Content Statement Students will be able to understand:	Indicator	Indicator
K-2	The cultural, social, economic and political effects of technology.	8.2.2.B.1	Identify how technology impacts or improves life.
	The effects of technology on the environment.	8.2.2.B.2	Demonstrate how reusing a product affects the local and global environment.
	The role of society in the development and use of technology.	8.2.2.B.3	Identify products or systems that are designed to meet human needs.
	The influence of technology on history.	8.2.2.B.4	Identify how the ways people live and work has changed because of technology.

3-5	The cultural, social, economic and political effects of technology.	8.2.5.B.1	Examine ethical considerations in the development and production of a product through its life cycle.
	The effects of technology on the environment.	8.2.5.B.2	Examine systems used for recycling and recommend simplification of the systems and share with product developers.
		8.2.5.B.3	Investigate ways that various technologies are being developed and used to reduce improper use of resources.
	The role of society in the development and use of technology.	8.2.5.B.4	Research technologies that have changed due to society's changing needs and wants.
		8.2.5.B.5	Explain the purpose of intellectual property law.
	The influence of technology on history.	8.2.5.B.6	Compare and discuss how technologies have influenced history in the past century.
6-8	The cultural, social, economic and political effects of technology.	8.2.8.B.1	Evaluate the history and impact of sustainability on the development of a designed product or system over time and present results to peers.
		8.2.8.B.2	Identify the desired and undesired consequences from the use of a product or system.

	The effects of technology on the environment.	8.2.8.B.3	Research and analyze the ethical issues of a product or system on the environment and report findings for review by peers and /or experts.
		8.2.8.B.4	Research examples of how humans can devise technologies to reduce the negative consequences of other technologies and present your findings.
	The role of society in the development and use of technology.	8.2.8.B.5	Identify new technologies resulting from the demands, values, and interests of individuals, businesses, industries and societies.
		8.2.8.B.6	Compare and contrast the different types of intellectual property including copyrights, patents and trademarks.
	The influence of technology on history.	8.2.8.B.7	Analyze the historical impact of waste and demonstrate how a product is upcycled, reused or remanufactured into a new product.

Content Area	Technology
Standard	8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.
Strand	C. Design: *The design process is a systematic approach to solving problems.*

Grade Level bands	Content Statement Students will be able to understand:	Indicator	Indicator
K-2	The attributes of design.	8.2.2.C.1	Brainstorm ideas on how to solve a problem or build a product.
		8.2.2.C.2	Create a drawing of a product or device that communicates its function to peers and discuss.
		8.2.2.C.3	Explain why we need to make new products.
	The application of engineering design.	8.2.2.C.4	Identify designed products and brainstorm how to improve one used in the classroom.
		8.2.2.C.5	Describe how the parts of a common toy or tool interact and work as part of a system.
	The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.	8.2.2.C.6	Investigate a product that has stopped working and brainstorm ideas to correct the problem.
3-5	The attributes of design.	8.2.5.C.1	Collaborate with peers to illustrate components of a designed system.
		8.2.5.C.2	Explain how specifications and limitations can be used to direct a product’s development.

		8.2.5.C.3	Research how design modifications have lead to new products.
	The application of engineering design.	8.2.5.C.4	Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models.
		8.2.5.C.5	Explain the functions of a system and subsystems.
	The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.	8.2.5.C.6	Examine a malfunctioning tool and identify the process to troubleshoot and present options to repair the tool.
		8.2.5.C.7	Work with peers to redesign an existing product for a different purpose.
6-8	The attributes of design.	8.2.8.C.1	Explain how different teams/groups can contribute to the overall design of a product.
		8.2.8.C.2	Explain the need for optimization in a design process.
		8.2.8.C.3	Evaluate the function, value, and aesthetics of a technological product or system, from the perspective of the user and the producer.
		8.2.8.C.4	Identify the steps in the design process that would be used to solve a designated problem.

	The application of engineering design.	8.2.8.C.5	Explain the interdependence of a subsystem that operates as part of a system.
		8.2.8.C.5.a	Create a technical sketch of a product with materials and measurements labeled.
	The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.	8.2.8.C.6	Collaborate to examine a malfunctioning system and identify the step-by-step process used to troubleshoot, evaluate and test options to repair the product, presenting the better solution.
		8.2.8.C.7	Collaborate with peers and experts in the field to research and develop a product using the design process, data analysis and trends, and maintain a design log with annotated sketches to record the developmental cycle.
		8.2.8.C.8	Develop a proposal for a chosen solution that include models (physical, graphical or mathematical) to communicate the solution to peers.

Content Area	Technology
Standard	8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.
Strand	D. Abilities for a Technological World: *The designed world is the product of a design process that provides the means to convert resources into products and systems.*

Grade Level bands	Content Statement Students will understand how to:	Indicator	Indicator

K-2	Apply the design process.	8.2.2.D.1	Collaborate and apply a design process to solve a simple problem from everyday experiences.
	Use and maintain technological products and systems.	8.2.2.D.2	Discover how a product works by taking it apart, sketching how parts fit, and putting it back together.
		8.2.2.D.3	Identify the strengths and weaknesses in a product or system.
		8.2.2.D.4	Identify the resources needed to create technological products or systems.
	Assess the impact of products and systems.	8.2.2.D.5	Identify how using a tool (such as a bucket or wagon) aids in reducing work.
3-5	Apply the design process.	8.2.5.D.1	Identify and collect information about a problem that can be solved by technology, generate ideas to solve the problem, and identify constraints and trade-offs to be considered.
		8.2.5.D.2	Evaluate and test alternative solutions to a problem using the constraints and trade-offs identified in the design process to evaluate potential solutions.
	Use and maintain technological products and systems.	8.2.5.D.3	Follow step by step directions to assemble a product or solve a problem.
		8.2.5.D.4	Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved.
		8.2.5.D.5	Describe how resources such as material, energy, information, time, tools, people and capital are used in products or systems.

	Assess the impact of products and systems.	8.2.5.D.6	Explain the positive and negative effect of products and systems on humans, other species and the environment, and when the product or system should be used.
		8.2.5.D.7	Explain the impact that resources such as energy and materials used in a process to produce products or system have on the environment.
6-8	Apply the design process.	8.2.8.D.1	Design and create a product that addresses a real world problem using a design process under specific constraints.
		8.2.8.D.2	Identify the design constraints and trade-offs involved in designing a prototype (e.g., how the prototype might fail and how it might be improved) by completing a design problem and reporting results in a multimedia presentation, design portfolio or engineering notebook.
		8.2.8.D.3	Build a prototype that meets a STEM-based design challenge using science, engineering, and math principles that validate a solution.
	Use and maintain technological products and systems.	8.2.8.D.4	Research and publish the steps for using and maintaining a product or system and incorporate diagrams or images throughout to enhance user comprehension.
	Assess the impact of products and systems.	8.2.8.D.5	Explain the impact of resource selection and the production process in the development of a common or technological product or system.
		8.2.8.D.6	Identify and explain how the resources and processes used in the production of a current technological product can be modified to have a more positive impact on the environment.

Content Area	Technology
Standard	8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.
Strand	E. Computational Thinking: Programming: *Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.*

Grade Level bands	Content Statement Students will be able to understand:	Indicator	Indicator
K-2	Computational thinking and computer programming as tools used in design and engineering.	8.2.2.E.1	List and demonstrate the steps to an everyday task.
		8.2.2.E.2	Demonstrate an understanding of how a computer takes input through a series of written commands and then interprets and displays information as output.
		8.2.2.E.3	Create algorithms (a sets of instructions) using a pre-defined set of commands (e.g., to move a student or a character through a maze).
		8.2.2.E.4	Debug an algorithm (i.e., correct an error).

		8.2.2.E.5	Use appropriate terms in conversation (e.g., basic vocabulary words: input, output, the operating system, debug, and algorithm).
3-5	Computational thinking and computer programming as tools used in design and engineering.	8.2.5.E.1	Identify how computer programming impacts our everyday lives.
		8.2.5.E.2	Demonstrate an understanding of how a computer takes input of data, processes and stores the data through a series of commands, and outputs information.
		8.2.5.E.3	Using a simple, visual programming language, create a program using loops, events and procedures to generate specific output.
		8.2.5.E.4	Use appropriate terms in conversation (e.g., algorithm, program, debug, loop, events, procedures, memory, storage, processing, software, coding, procedure, and data).
6-8	Computational thinking and computer programming as tools used in design and engineering.	8.2.8.E.1	Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used.
		8.2.8.E.2	Demonstrate an understanding of the relationship between hardware and software.
		8.2.8.E.3	Develop an algorithm to solve an assigned problem using a specified set of commands and use peer review to critique the solution.
		8.2.8.E.4	Use appropriate terms in conversation (e.g., programming, language, data, RAM, ROM, Boolean logic terms).

Accommodations and Modifications for students who are classified as Gifted and Talented Students:

(This course of instruction shall be modified through varying techniques, strategies, materials, etc. to meet the needs of all students, including, but not limited to, special education, E.L.L. and basic skills. Programs shall be modified based on I.E.P.'s, 504's, etc.)

Differentiation Strategies

Differentiation strategies can require varied amounts of preparation time. High-prep strategies often require a teacher to both create multiple pathways to process information/demonstrate learning and to assign students to those pathways. Hence, more ongoing monitoring and assessment is often required. In contrast, low-prep strategies might require a teacher to strategically create process and product choices for students, but students are allowed to choose which option to pursue given their learning profile or readiness level.

Low Prep Strategies	
Varied journal prompts, spelling or vocabulary lists	Students are given a choice of different journal prompts, spelling lists or vocabulary lists depending on level of proficiency/assessment results.
Anchor activities	Anchor activities provide meaningful options for students when they are not actively engaged in classroom activities (e.g., when they finish early, are waiting for further directions, are stumped, first enter class, or when the teacher is working with other students). Anchors should be directly related to the current learning goals.
Choices of books	Different textbooks or novels (often at different levels) that students are allowed to choose from for content study or for literature circles.
Choices of review activities	Different review or extension activities are made available to students during a specific section of the class (such as at the beginning or end of the period).

Flexible grouping	Students might be instructed as a whole group, in small groups of various permutations (homogeneous or heterogeneous by skill or interest), in pairs or individuals. Any small groups or pairs change over time based on assessment data.
Multiple Intelligence or Learning Style options	Students select activities or are assigned an activity that is designed for learning a specific area of content through their strong intelligence (verbal-linguistic, interpersonal, musical, etc.)
Varying scaffolding of same organizer	Provide graphic organizers that require students to complete various amounts of information.
Think-Pair-Share by readiness, interest, and/or learning profile	Students are placed in predetermined pairs, asked to think about a question for a specific amount of time, then are asked to share their answers first with their partner and then with the whole group.
Mini workshops to re-teach or extend skills	A short, specific lesson with a student or group of students that focuses on one area of interest or reinforcement of a specific skill.
Games to practice mastery of information and skill	Use games as a way to review and reinforce concepts. Include questions and tasks that are on a variety of cognitive levels.
Multiple levels of questions	Teachers vary the sorts of questions posed to different students based on their ability to handle them. Varying questions is an excellent way to build the confidence (and motivation) of students who are reluctant to contribute to class discourse.
High Prep Strategies (add to list as needed)	
Cubing	Designed to help students think about a topic or idea from many different angles or perspectives. The tasks are placed on the six sides of a cube and use commands that help support thinking (justify, describe, evaluate, connect, etc.). The students complete the task on the side that ends face up, either independently or in homogenous groups.
Tiered assignment/ product	The content and objective are the same, but the process and/or the products that students must create to demonstrate mastery are varied according to the students' readiness level.
Independent studies	Students choose a topic of interest that they are curious about and wants to discover new information on. Research is done from questions developed by the student and/or teacher. The researcher produces a product to share learning with classmates.
Jigsaw	Students are grouped based on their reading proficiency and each group is given an appropriate text on a specific aspect of a topic (the economic, political and social impact of the Civil War, for example). Students later get into heterogeneous groups to share their findings with their peers, who have read about different areas of study from source texts on their own reading levels. The jigsaw technique allows you to tackle the same subject with all of your students while discreetly providing them the different tools they need

	to get there.
Multiple texts	The teacher obtains or creates a variety of texts at different reading levels to assign strategically to students.
Alternative assessments	After completing a learning experience via the same content or process, the student may have a choice of products to show what has been learned. This differentiation creates possibilities for students who excel in different modalities over others (verbal versus visual).
Modified Assessments	Assessments can be modified in a variety of ways – for example by formatting the document differently (e.g. more space between questions) or by using different types of questions (matching vs. open ended) or by asking only the truly essential questions.
Literature circles	Flexible grouping of students who engage in different studies of a piece of literature. Groups can be heterogeneous and homogeneous.
Learning Centers	A station (or simply a collection of materials) that students might use independently to explore topics or practice skills. Centers allow individuals or groups of students to work at their own pace. Students are constantly reassessed to determine which centers are appropriate for students at a particular time, and to plan activities at those centers to build the most pressing skills.
Tic-Tac-Toe Choice Board	The tic-tac-toe choice board is a strategy that enables students to choose multiple tasks to practice a skill, or demonstrate and extend understanding of a process or concept. From the board, students choose (or the teacher assigns) three adjacent or diagonal. To design a tic-tac-toe board: - Identify the outcomes and instructional focus - Design 9 different tasks - Use assessment data to determine student levels - Arrange the tasks on a tic-tac-toe board either randomly, in rows according to level of difficulty, or you may want to select one critical task to place in the center of the board for all students to complete.

Gifted and Talented: The regulations require that district boards of education provide appropriate K-12 services for gifted and talented students. This includes appropriate curricular and instructional modifications for gifted and talented students indicating content, process, products, and learning environment. District boards of education must also take into consideration the *PreK-Grade 12 National Gifted Program Standards* of the National Association for Gifted Children in developing programs for gifted and talented students. A copy of those standards is available at *www.nagc.org*. In addition, information can be found at www.state.nj.us/education/aps/ccs/gandt.

Accommodations and Modifications for students who are classified as E.L.L Students:

(This course of instruction shall be modified through varying techniques, strategies, materials, etc. to meet the needs of all students, including, but not limited to, special education, E.L.L. and basic skills. Programs shall be modified based on I.E.P.'s, 504's, etc.)

Classroom Modifications for E.L.L.	
PACING: ● Extend time requirements ● Omit assignments	PRESENTATION OF SUBJECT MATERIAL: ● Use individual/small group instruction ● Use specialized curriculum ● Simplify language ● Tape lectures for playback ● Demonstrate concepts ● Use manipulatives ● Emphasize critical information ● Use graphic organizers ● Pre-teach vocabulary
ENVIRONMENT: ● Assign preferential seating ● Assign peer buddy	MATERIALS: ● Provide taped textbooks ● Highlight textbooks/study guides ● Use supplementary materials ● Give assistance in note taking ● Type handwritten teacher materials ● Use bilingual dictionaries, language learner dictionaries and electronic translators ● Use adapted/modified textbooks Allow use of computer/word processor
REINFORCEMENT AND FOLLOW THROUGH: ● Use positive reinforcement ● Use concrete reinforcement ● Check often for understanding/review ● Arrange for peer tutoring	TESTING ADAPTATIONS; ● Allow students to answer orally ● Use multiple-choice format ● Read test to student ● Modify format

• Plan cooperative learning experiences • Provide language experience • Give immediate feedback • Have student repeat directions • Make/use vocabulary files • Teach study skills • Use study guides to organize materials • Repeat/review/drill	• Write a different test • Shorten test length • Require only selected test items • Create alternative assessment
ASSIGNMENTS: • Lower reading level • Give directions in small, distinct steps • Allow copying from paper/book • Use written backup for oral directions • Lower difficulty level • Shorten assignment • Read directions to students • Give oral clues or prompts • Record or type assignments • Adapt worksheets, packets Use alternate assignments	GRADING: • Modify grading system • Modify weights of course components • Modify course objectives/outcome

Classroom Accommodations for E.L.L	
Environment: • Preferential Seating • Assign peer tutor • Visual charts/cues • Provide tape recorded discourse • Highlight key words • Use real objects/manipulatives • Refer to prior knowledge (K-W-L or other) • Provide quiet study space	Assignment: • Adjust reading level materials • Single step directions • Provide extra examples/models • Shorten assignment/task • Directions read aloud • Adapt/simplify language on task • Give oral prompts/cues • Allow projects to replace written tasks
Presentation: • Individual/small group discussions • Use specialized curriculum/equipment • Simplify language/keyword	Materials: • Provide tape recorded text • Provide supplementary materials • Highlighted text

• Demonstrations for key concepts • Visual or Multimodal presentations • Frequently check for understanding • Use manipulatives • Native Language presentations	• Bilingual dictionaries/glossaries • Use of graphic organizers • Pre-teach all vocabulary • Provide varied visual/multi-sensory input • Native Language Text
Management: • Allow oral responses • Use positive reinforcement • Repeat all directions • Use cooperative learning groups • Use projects/interdisciplinary tasks • Provide language experience tasks • Have student repeat directions • Immediate praise/feedback • Plan peer tutors/models • Provide high interest topics/options • Provide extended time to complete tasks • Allow student to think/speak in native language	Class Assessment: • Allow oral responses • Read test aloud • Read portions/key words on test • Modify format/length of test • Alternate with culturally non-biased items • Provide glossaries in native language • Modify test items/weighted scores • Use multiple choice format

Accommodations for English Language Learners General Classroom and Content Areas
MATH: • At beginning to intermediate levels of proficiency, English Language Learners should be shown examples of a completed assignment to model the correct format. • Assignments and directions should be printed on the board along with cursive representation. • A bilingual assistant/interpreter, when available, could be used to explain math concepts in the student's primary language. • Students should have access to counters, number lines and other types of manipulatives, which enable them to complete assignments at their level of instruction. • Rewrite story problems in simpler English. Use short sentences, pictures, and illustrations to encourage understanding. • Show students how to prepare a card file of number words. Write the word on one side and the symbol on the opposite side. SOCIAL STUDIES • Allow beginning and advanced beginning students to use drawings to demonstrate knowledge of concepts. • Show English Language Learners at all proficiency levels a model of a project/assignment prior to their completing the assignment. • Teach the key concepts while limiting the vocabulary and details in the lesson. • Test only those key concepts addressed. • Use many visual aids during the instruction process; i.e. overhead transparencies, maps, graphic organizers, puzzles, computer, etc.

- Tape record the test or give test orally to student.
- Allow ELL student capable of tape-recording lessons to do so. (Provides immediate feedback for student to listen to the lesson at home and work on assignments on his/her own.)

READING

When making accommodations for ELL students in the area of reading, it is important to remember that there is a difference between listening and speaking and reading and writing. Some English Language Learners might be considered advanced in speaking, but functioning at a beginning instructional level when it comes to reading with fluency. Keep this in mind when assigning grades. Try to remember to place the emphasis on the student's instructional level in Reading.

- ELL students at all proficiency levels should have reading materials provided at their instructional level by the classroom teacher.
- ELL students should be taught vocabulary in context; remember to limit the number of vocabulary words taught in each unit to only the key words. As comprehension increases, increase number of words.
- Tape record information for the ELL student to learn and let him/her listen to it.
- Let students act out the story to demonstrate understanding.
- Use a variety of strategies and approaches to teach reading. The key component is to make sure that students are being taught vocabulary through meaningful context, not in isolation.
- Provide the ELL student the background knowledge necessary in order to understand.
- Teach ELL students reading strategies that enable them to predict, connect, question, and visualize a story.

SCIENCE

- Homework should include completing graphs, drawing, writing in journal, etc.
- Students should work in groups when possible to solve problems or conduct experiments.
- Provide many hands-on experiences as ELL students learn best by doing and seeing lessons.
- Show ELL students at all proficiency levels a sample of a completed project or assignment when requiring a science project for a grade.
- Have students compile notebooks of their hypotheses, materials, procedures, data, conclusions of experiments, and field experiences.
- Have students prepare collections of science objects, such as sticks and leaves.
- Use "hands-on" experiential activities that do not rely on academic language for understanding
- Prepare large charts that summarize the steps involved in experiments.

WRITING

When making accommodations for English language learners in the area of writing, the same principle holds true. There is a large difference between listening and speaking and reading and writing. Many ELL students could be considered advanced in speaking but at a beginning instructional level in writing.

- ELL students may not know what cursive writing is; therefore, it will have to be taught.
- ELL students could be provided a list of basic sentence patterns or words (with pictures) most frequently used in their classrooms for use when writing independently.
- ELL students could use a journal as a means of practicing writing with teacher feedback.
- Classroom teacher could provide a model of what he/she expects the finishing writing assignment to look like.
- Allow ELL students to write about topics in which they have background knowledge.
- Allow ELL students to work together when possible to brainstorm and to begin the writing process.
- Use vocabulary words and sentence structures at the instructional level of the student. Use words from their own materials. The words must have meaning for the student. Provide context clues when helping the child to learn new material.
- Try to limit the number of spelling words assigned. Increase the number of words as comprehension level increases.
- Usually ELL student's oral language skills tend to be higher than their reading and writing skills. Adjust assignments based on the instructional level of the

student.

Accommodations and Modifications for students who are classified with 504's:

Examples of General Accommodations:
General program accommodations/adjustments or services are always made on a case-by-case basis and individualized. Accommodations are to be reasonable and are intended to provide persons with disabilities compensation for their functional limitation(s) due to a mental or physical impairment. Where Section 504 is concerned, accommodations are made to bring a student with a disability to the same starting point as a non-disabled student. Consequently, the accommodations defined in a Section 504 plan are those interventions that are not typically available to all students.

Environmental Strategies
• Provide a structured learning environment
• Make separate "space" for different types of tasks
• Possible adapting of non-academic times such as lunch, recess, and physical education
• Change student seating
• Utilize a study carrel
• Alter location or personal or classroom supplies for easier access or to minimize distraction
• Provide sensory breaks
• Provide a written or picture schedule

Organizational Strategies
• Model and reinforce organizational systems (i.e. color-coding)
• Write out homework assignments, check student's recording of assignments
• Tailor homework assignments toward student strengths
• Set time expectations for assignments
• Provide clues such as clock faces indicating beginning and ending times
• Teach study/organizational skills
• Schedule before or after school tutoring/homework assistance

Behavioral Strategies
• Use behavioral management techniques consistently within a classroom and across classes
• Implement behavioral/academic contracts
• Utilize positive verbal and/or nonverbal reinforcements
• Utilize logical consequences
• Confer with the student's parents (and student as appropriate)

• Establish a home/school communication system for behavior monitoring
• Post rules and consequences for classroom behavior
• Put student on daily/weekly progress report/contract
• Reinforce self-monitoring and self-recording of behaviors

Presentation Strategies
• Tape lessons so the student can listen to them again; allow students to tape lessons
• Use computer-aided instruction and other audiovisual equipment
• Select alternative textbooks, workbooks, or provide books on tape
• Highlight main ideas and supporting details in the book
• Provide copied material for extra practice (i.e. outlines, study guides)
• Prioritize drill and practice activities for relevance
• Vary the method of lesson presentation using multi-sensory techniques:
a) lecture plus overhead/board demonstration support
b) small groups required to produce a written product
c) large groups required to demonstrate a process
d) computer-assisted instruction
e) peer tutors or cross-age tutors
f) demonstrations, simulations
g) experiments
h) games
• Ask student to repeat/paraphrase context to check understanding
• Arrange for a mentor to work with student in his or her interest area or area of greatest strength
• Provide peer tutoring
• Simplify and repeat instructions about in-class and homework assignments
• Vary instructional pace
• Reinforce the use of compensatory strategies, i.e. pencil grip, mnemonic devices, “spell check”
• Vary kind of instructional materials used
• Assess whether student has the necessary prerequisite skills. Determine whether materials are appropriate to the student's current functioning levels
• Reinforce study skill strategies (survey, read, recite, review)
• Introduce definition of new terms/vocabulary and review to check for understanding
• Be aware of student's preferred learning style and provide matching instruction materials
• Pre-teach and/or re-teach important concepts • Prepare advanced organizers/study guides for new material

Assignments
• Modify the amount of homework
• Use written directions to supplement oral directions
• Reduce paper and pencil tasks
• Allow for assignments to be word processed

• Lower reading level of assignments
• Break assignments into a series of smaller assignments
• Use highlighted texts

Evaluation Methods
• Limit amount of material presented on a single page
• Provide a sample or practice test
• Provide for oral testing
• Provide tests in segments so that student hands in one segment before receiving the next part
• Provide personal copy of test tools and allow for color-coding/highlighting
• Adjust time for completion
• Modify weights of tests when grading

Accommodations and Modifications for students who are classified with IEP's:

(This course of instruction shall be modified through varying techniques, strategies, materials, etc. to meet the needs of all students, including, but not limited to, special education, E.S.L. and basic skills. Programs shall be modified based on I.E.P.'s, 504's, etc.)

A. Setting Accommodations	B. Scheduling Accommodations	C. Test Materials Modifications
1. Administering the assessment: a. individually in a separate room b. in a small group in a separate room c. in the resource room d. in a special education classroom e. at home or in a hospital (this will depend on the nature of the assessment task) 2. Seating the student in the front of the room near the examiner or proctor 3. Seating the student facing the examiner or proctor 4. Providing special lighting 5. Providing special furniture e.g., desks, trays, carrels	1. Adding time as needed 2. Providing frequent breaks 3. Terminating a section of the test when a student has indicated that he/she has completed all the items he/she can. The examiner must ensure that the student has attempted all items in a section since items are not ordered by difficulty. When this accommodation is used, the test must be administered in a small group or individually to avoid distraction.	1. Administering the large-print version of the test 2. Administering the Braille version of the test

D. Test Procedure Modifications
1. Administration modifications
a. reading directions aloud
b. reading test items aloud (do not read aloud or sign the reading passages in Language Arts Literacy –the reading items may be read or signed); ONLY the teacher who must read the test items aloud or sign is permitted to have a test booklet assigned to him/her for this task
c. providing and ensuring that amplification (hearing aid and/or FM system) is in working order
d. using a sign language or cued speech interpreter to sign or cue the directions or test items but NOT the reading passages
e. masking a portion of the test booklet and/or answer folder to eliminate visual distractors or providing reading windows

f. repeating, clarifying, or rewording directions ONLY
g. providing written directions on a separate sheet or transparency
h. using an examiner who is familiar with the student
i. using an examiner who can communicate fluently in sign language (American Sign Language or a form of Manually Coded English)
j. providing manipulatives for math items e.g., number line, counting chips, abacus (for NJ ASK 3-8 ONLY)
k. using graph paper for HSPA Mathematics (all students are permitted graph paper for NJ ASK 3-8)
l. using a Braille ruler and talking calculator or large-face calculator
m. using tactile or visual cues for deaf or hard of hearing students to indicate time to begin, time remaining, and time to end a particular part of the test
n. using calculators for NJ ASK 3-8 Mathematics (all students are permitted calculators for HSPA)

2. Response modifications
a. having an examiner record the student's identification information on the test booklet and/or answer folder
b. dictating oral responses to a scribe (examiner or proctor who writes from dictation)
c. using a Braille writer to record responses
d. signing responses to a sign language interpreter (student must indicate all punctuation and must spell all keywords)
e. recording responses on a word processor (all editorial functions MUST be disabled)
f. providing an augmentative communication device
g. using a larger diameter or modified special grip # 2 pencil
h. circling answers in the test booklet (the examiner subsequently transfer the answers to the answer folder); for the NJ ASK 3-4, the examiner bubbles the student's answer choice in the scannable test booklet
i. allowing separate additional continuation pages for writing tasks

OTHER CONSIDERATIONS

Ensure that:

1. any medication has been appropriately adjusted so it will not interfere with the student's functioning.
2. eyeglasses are used, if needed.
3. hearing aids, FM systems, augmentative communication devices, word processors, or other types of equipment are functioning properly.
4. source and strength of light are appropriate.
5. all students can clearly see and hear the examiner.
6. all deaf or hard of hearing students who communicate aurally/orally are watching the examiner when instructions are given.

Gifted and Talented: The regulations require that district boards of education provide appropriate K-12 services for gifted and talented students. This includes appropriate curricular and instructional modifications for gifted and talented students indicating content, process, products, and learning environment. District boards of education must also take into consideration the *PreK-Grade 12 National Gifted Program Standards* of the National Association for Gifted Children in developing programs for gifted and talented students. A copy of those standards is available at *www.nagc.org*. In addition, information can be found at www.state.nj.us/education/aps/ccs/gandt.

Accommodations and Modifications for students at risk of failing:

Students thought to be at risk for failing will be given interventions in the classroom by the teacher and support staff. Data on these interventions will be tracked and if sufficient progress is not demonstrated, that student will be referred to the I&RS team. The I&RS team will compile all existing data and create targeted and individual interventions with the help of area specialists. These interventions may include some of the following:

- Provide visual and verbal directions
- Simplify directions into one-step
- Check back after two steps have been completed
- Model self-talk to complete tasks
- Discuss organizational plans for work and work completion
- Allow for multiple methods of demonstrating learning and competence
- Enforce opportunities to correct work
- Provide 1:1 instructional time
- Provide physical manipulatives whenever possible
- Assess and provide optimal seating arrangement