NJ-CCSS AREA: MATHEMATICS

North Brunswick Township Public Schools

MATH LAB IV

Acknowledgements

Kelly Harrity, Mathematics Teacher
Diane M. Galella, Supervisor of Mathematics

Date: New_____

Revision April 2012

Board Adoption_____

<table>
<tr><th colspan="4">Quarter I</th><th colspan="2">Quarter II</th></tr>
<tr>
<td>Overview:
Number Sense
Spatial Sense
Geometry
Patterns
Functions
Algebra
Data Analysis
Probability
Discrete Math
[Application for real world problems – open ended questions]</td>
<td>HSPA Prep:

Review HSPA reference sheet

Multiple choice strategies for all four clusters

Practice open ended questions for all four clusters

(18 days)</td>
<td>AHSA Prep:

Detailed open ended questions regarding:
Number Sense
Spatial Sense
Geometry

(approx. 13 days)</td>
<td>AHSA Prep:

Detailed open ended questions regarding:
Patterns
Functions
Algebra
Data Analysis
Probability
Discrete Math

(approx. 13 days)</td>
<td>AHSA Prep:

Review open ended questions from 1st quarter to prepare students for AHSA process

(30 days)</td>
<td>AHSA Process:

Administer AHSA process

(15 days)</td>
</tr>
<tr><th colspan="4">Quarter III</th><th colspan="2">Quarter IV</th></tr>
<tr>
<td>HSPA Prep:

Review HSPA reference sheet

Multiple choice strategies for all four clusters

Practice open ended questions for all four clusters

(18 days)</td>
<td>AHSA Prep:

Detailed open ended questions regarding:
Number Sense
Spatial Sense
Geometry

(approx. 8 days)</td>
<td>AHSA Prep:

Detailed open ended questions regarding:
Patterns
Functions
Algebra
Data Analysis
Probability
Discrete Math

(approx. 8 days)</td>
<td>AHSA Process:

Administer AHSA process

(approx. 12 days)</td>
<td colspan="2">Financial Literacy:

Budget for vacation (approx. 7 days)

Balance checkbook and bank statements (approx. 20 days)

Create monthly budget (approx. 11 days)

Understanding how credit cards work (approx. 7 days)</td>
</tr>
</table>

- Math Vocabulary: HSPA: High School Proficiency Assessment, AHSA: Alternate High School Assessment
- **HSPA Prep:** Students will work on test taking strategies as well as developing an understanding of HSPA clusters that would offer the best opportunity to pass the fall administration of the HSPA. For those students who do not pass the fall HSPA, an additional HPSA will be administered in March.
- **AHSA Prep:** Students will learn how to successfully answer open ended questions that require full mathematical computations and explanations to solve real world problems. Each cluster will be covered to ensure that students will be prepared when AHSA tasks are to be administered.
- **AHSA Process:** Students will review the best way to answer open ended questions. Once students feel prepared they will complete state assigned AHSA tasks.
- **Financial Literacy:** Once students have completed the final state assessment they will begin to prepare to understand finances as they relate to real life.

New Jersey - Common Core State Standard for Mathematics

HSPA Prep: Number Sense **Grade: 12** **Date: May 2012**

NJ-CCSS Domain Essential Questions	NJ-CCSS Cluster.Standard Standards for Mathematical Practice
N-RN The Real Number System • What is the difference between rational and irrational numbers? • Can numbers be represented in various forms?	**N-RN.1 Extend the properties of exponents to rational exponents.** Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents **N-RN.3 Use properties of rational and irrational numbers.** Explain why the sum or product of two rational numbers are rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. **SMP.5** Use appropriate tools strategically. **SMP.6** Attend to precision.

Skills/Objectives SWBAT…	Instructional Strategies Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	Modifications ESL / Special Education Academic Support/G&T Differentiated Instruction	Assessments Formative Summative Benchmarks	Pacing
Obj: Extend understanding of the number system to include irrational and rational numbers **Obj:** Represent equivalent forms of the same number. **Obj**: Distinguish between rational and irrational numbers from their decimal representation **Obj**: Distinguish between terminating and repeating decimal forms of rational numbers **Obj:** Apply approximation techniques to situations involving initial portions of infinite decimals	**HSPA review requires students to work quickly in solving both multiple choice questions and open-ended questions.** • Review HSPA reference sheet often. • Use Venn Diagram of number sets • Plot number on a number line • Review how to convert between fractional-decimal-percent • Review conversions • Complete relevant practice open-ended questions that have been released by the state • **Materials/Technology/Resources:** Barron's NJ HSPA preparation workbook **Interdisciplinary Connections:** Business: p. 51 #1 – 6; Science: p. 27 #1 – 4	• Extended time • Daily record-keeping assistance • Manipulatives • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • In class practice problems • Board work • Do Now prompts • Class work • Problem solving activities • Think and Discuss • Open-ended questions **Summative:** • Sample HSPA practice tests **Benchmark:** • HSPA practice tests	11 days

HSPA Prep: Spatial Sense and Geometry **Grade: 12** **Date: May 2012**

NJ-CCSS **Domain** **Essential Questions**	**NJ-CCSS** **Cluster.Standard** **Standards for Mathematical Practice**
G-CO Congruence • What is the difference between congruency and similarity? • How are transformations constructed?	**G-CO.4 Experiment with transformations in the plane.** Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. **G-CO.13 Make geometric constructions**. Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle. **SMP.1** Make sense of problems and persevere in solving them. **SMP.2** Reason abstractly and quantitatively.

Skills/Objectives SWBAT…	**Instructional Strategies** Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	**Modifications** ESL / Special Education Academic Support/G&T Differentiated Instruction	**Assessments** Formative Summative Benchmarks	**Pacing**
Obj: Apply fundamental relationships between geometric figures to problem solving **Obj:** Apply concepts of similarity and congruence to problem solving **Obj**: Use transformations to find images, pre-images; use images and pre-images to determine transformations **Obj:** Determine the sequence of transformations needed to map one figure onto another	**HSPA review requires students to work quickly in solving both multiple choice questions and open-ended questions.** • Review HSPA reference sheet often. • Review basic definitions and provide geometric examples • Define congruency and similarity; present examples of theorems/postulates • Present graph and mapping examples • Have students use cut-out transparencies of figures to use when developing concept • Use cut-out figures to determine transformations	• Extended time • Daily record-keeping assistance • Manipulatives • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • In class practice problems • Board work • Do Now prompts • Class work • Problem solving activities • Think and Discuss • Open-ended questions **Summative:** • Sample HSPA practice tests **Benchmark:** • HSPA practice tests	11 days

HSPA Prep: Patterns, Functions, Algebra **Grade: 12** **Date: May 2012**

NJ-CCSS **Domain** **Essential Questions**	**NJ-CCSS** **Cluster.Standard** **Standards for Mathematical Practice**
F-IF Interpreting Functions • What is the relation between the x and y variable? • How will the linear function relate the variables? • Can you use the function to answer relative questions?	**F-IF.4 Interpret functions that arise in applications in terms of the context.** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. **F-IF.5 Interpret functions that arise in applications in terms of the context.** Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. **F-IF.6 Interpret functions that arise in applications in terms of the context.** Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.**SMP.1** Make sense of problems and persevere in solving them. **SMP.1** Make sense of problems and persevere in solving them. **SMP.3** Construct viable arguments and critique the reasoning of others. **SMP.4** Model with mathematics. **SMP.2** Reason abstractly and quantitatively.

Skills/Objectives SWBAT…	**Instructional Strategies** Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	**Modifications** ESL / Special Education Academic Support/G&T Differentiated Instruction	**Assessments** Formative Summative Benchmarks	**Pacing**
Obj: Use tables and graphs to identify patterns and relationships **Obj:** Use linear and non-linear functions to model mathematical situations and real-world phenomena **Obj:** Explain how a change in one physical quantity can produce a corresponding change in another quantity **Obj**: Use algebraic methods to model real-life situations	**HSPA review requires students to work quickly in solving both multiple choice questions and open-ended questions.** • Present ways to find patterns by using tables and graphs of functions • Present various graphs and have students identify change and its meaning • "Cellular Phone" open-ended question • Provide sets and graphical examples of relations and functions • Show how to determine if a function exists\ • "Fencing" open-ended question • Present quadratic formula; explain connections of solution to equation and solutions on graph • "Pens/pencils" open-ended question	• Extended time • Daily record-keeping assistance • Manipulatives • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • In class practice problems • Problem solving activities • Think and Discuss • Open-ended questions **Summative:** • Sample HSPA practice tests **Benchmark:** • HSPA practice tests	11 days

HSPA Prep: Data Analysis, Probability, Discrete Math **Grade: 12** **Date: May 2012**

NJ-CCSS **Domain** **Essential Questions**	**NJ-CCSS** **Cluster.Standard** **Standards for Mathematical Practice**
S-MD Using Probability to Make Decision • What is the difference between theoretical and empirical probabilities? • In what form can probability be represented?	**(+)S-MD.1 Calculate expected values and use them to solve problems.** Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions. **(+)S-MD.2 Calculate expected values and use them to solve problems.** Calculate the expected value of a random variable; interpret it as the mean of the probability distribution. **(+) S-MD.5a Use probability to evaluate outcomes of decisions.** Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. Find the expected payoff for a game of chance. **SMP.1** Make sense of problems and persevere in solving them. **SMP.2** Reason abstractly and quantitatively. **SMP.4** Model with mathematics.

Skills/Objectives SWBAT…	**Instructional Strategies** Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	**Modifications** ESL / Special Education Academic Support/G&T Differentiated Instruction	**Assessments** Formative Summative Benchmarks	**Pacing**
Obj: Find theoretical and empirical probabilities. **Obj:** Compare simulation model to the theoretical model **Obj**: Recognize probabilities as ratios and percents	**HSPA review requires students to work quickly in solving both multiple choice questions and open-ended questions.** • Review HSPA reference sheet often. • Use spinner, dice, cards to explore probability • Compare theoretical and experimental probabilities using hands on activity • Review fraction-decimal-percent conversions • Review ratios • Complete open-ended question “Disc Choices”	• Extended time • Daily record-keeping assistance • Manipulatives • Simulations • “Think alouds” • Stations/centers • Small group instruction • Pair-share	**Formative:** • Classwork • Problem solving • Think and Discuss • Open-ended questions **Summative:** • Sample HSPA practice tests **Benchmark:** • HSPA practice tests	11 days

HSPA Prep: Number Sense **Grade: 12** **Date: May 2012**

NJ-CCSS **Domain** **Essential Questions**	**NJ-CCSS** **Cluster.Standard** **Standards for Mathematical Practice**
N-RN The Real Number System • How can we represent extremely large and extremely small numbers? • Where in the real world do we use absolute values, exponents, and approximate roots of numbers?	**N-RN.2 Extend the properties of exponents to rational exponents.** Rewrite expressions involving radicals and rational exponents using the properties of exponents. **N-Q.1 Reason quantitatively and use units to solve problems.** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. **SMP.1** Make sense of problems and persevere in solving them. **SMP.2** Reason abstractly and quantitatively.

Skills/Objectives SWBAT…	**Instructional Strategies** Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	**Modifications** ESL / Special Education Academic Support/G&T Differentiated Instruction	**Assessments** Formative Summative Benchmarks	**Pacing**
Obj: Evaluate expressions containing powers, roots and factorials **Obj:** Use primes, factors and multiples in real world situations **Obj:** Determine whether or not properties of equivalence relations and arithmetic operations apply to different relations and operations **Obj:** Use absolute values, exponents, and approximations for roots of numbers **Obj:** Solve proportions **Obj:** Illustrate, model and solve problems using ratios, proportions and percents	**HSPA review requires students to work quickly in solving both multiple choice questions and open-ended questions.** • Review HSPA reference sheet often. • Develop meaning of powers through patterns • Notes on properties/application activity • Number line representation of meaning of absolute value as distance • Calculator activity for finding roots • Apply ratios and proportions to solve given tasks • Complete relevant practice open-ended questions that have been released by the state **Materials/Technology/Resources:** Barron's NJ HSPA preparation workbook **Interdisciplinary Connections:** Business: p. 51 #1 – 6; Science: p. 27 #1 – 4	• Extended time • Daily record-keeping assistance • Manipulatives • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • In class practice problems • Board work • Do Now prompts • Class work • Problem solving activities • Think and Discuss • Open-ended questions **Summative:** • Sample HSPA practice tests **Benchmark:** • HSPA practice tests	11 days

HSPA Prep: Spatial Sense and Geometry **Grade: 12** **Date: May 2012**

NJ-CCSS **Domain** **Essential Questions**	**NJ-CCSS** **Cluster.Standard** **Standards for Mathematical Practice**
G-GMD Geometric Measure and Dimension • When do you need to find the area or volume of various shapes? • How are such measurements calculated?	**G-GMD.1 Explain volume formulas and use them to solve problems.** Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. **G-CMD.3** Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. **SMP.2** Reason abstractly and quantitatively. **SMP.4** Model with mathematics **SMP.5** Use appropriate tools strategically

Skills/Objectives SWBAT…	**Instructional Strategies** Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	**Modifications** ESL / Special Education Academic Support/G&T Differentiated Instruction	**Assessments** Formative Summative Benchmarks	**Pacing**
Obj: Utilize the appropriate formulas and label answers with appropriate units of measure **Obj:** Measure objects and determine the degree of accuracy needed when measuring them **Obj:** Develop and apply a variety of strategies for determining perimeter, circumference, area, surface area, volume, and angle measurement **Obj:** Express mathematically and explain the impact of change in an object's dimensions on its surface area, volume, and/or perimeter	**HSPA review requires students to work quickly in solving both multiple choice questions and open-ended questions.** • Review HSPA reference sheet often. • Use real life situations such as floor covering • Measure regular and odd shaped objects • Discuss inaccuracies in using measurement tools • Provide examples involving figures on grids, odd shaped figures, and shaded regions • Complete applications such as sand and storage • Use English sentences to explain reasoning	• Extended time • Daily record-keeping assistance • Manipulatives • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • In class practice problems • Board work • Do Now prompts • Class work • Problem solving activities • Think and Discuss • Open-ended questions **Summative:** • Sample HSPA practice tests **Benchmark:** • HSPA practice tests	11 days

HSPA Prep: Patterns, Functions, Algebra **Grade: 12** **Date: May 2012**

NJ-CCSS Domain Essential Questions	NJ-CCSS Cluster.Standard Standards for Mathematical Practice
F-LE Linear and Exponential Models • What mathematical patterns exist in real life? • How can we find such patterns? • Can you use these patterns to answer real life problems?	**F-LE.1 Construct and compare linear and exponential models and solve problems.** Distinguish between situations that can be modeled with linear functions and with exponential functions. **F-LE.1.b Construct and compare linear and exponential models and solve problems.** Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. **F-LE.2 Construct and compare linear and exponential models and solve problems.** Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). **SMP.1** Make sense of problems and persevere in solving them. **SMP.4** Model with mathematics. **SMP.7** Look for and make use of structure. **SMP.8** Look for and express regularity in repeated reasoning.

Skills/Objectives SWBAT…	Instructional Strategies Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	Modifications ESL / Special Education Academic Support/G&T Differentiated Instruction	Assessments Formative Summative Benchmarks	Pacing
Obj: Construct, recognize and extend patterns **Obj:** Use appropriate graphing techniques to represent patterns and real-world phenomena **Obj**: Find the sum of finite and arithmetic series and of finite and infinite geometric series **Obj:** Differentiate between linear and exponential growth	**HSPA review requires students to work quickly in solving both multiple choice questions and open-ended questions.** • Present was to find patterns by looking for common differences and ratios • Develop additional figures using patterns • Translate to algebraic rule • "Triangle of Numbers" open-ended question • Look at patterns to determine if arithmetic or geometric • Discuss limits informally • Graphic examples – use tables to determine change ratios • "Board Game Bonus" open-ended question	• Extended time • Daily record-keeping assistance • Manipulatives • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • In class practice problems • Problem solving activities • Think and Discuss • Open-ended questions **Summative:** • Sample HSPA practice tests **Benchmark:** • HSPA practice tests	11 days

HSPA Prep: Data Analysis, Probability, Discrete Math **Grade: 12** **Date: May 2012**

NJ-CCSS **Domain** **Essential Questions**	**NJ-CCSS** **Cluster.Standard** **Standards for Mathematical Practice**
S-ID Interpreting Categorical and Quantitative Data • When do we need to calculate averages? • How can we represent data?	**S.ID.1 Summarize, represent, and interpret data on a single count or measurement variable.** Represent data with plots on the real number line (dot plots, histograms, and box plots). **S.ID.2 Summarize, represent, and interpret data on a single count or measurement variable.** Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. **SMP.1** Make sense of problems and persevere in solving them. **SMP.2** Reason abstractly and quantitatively. **SMP.4** Model with mathematics.

Skills/Objectives SWBAT…	**Instructional Strategies** Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	**Modifications** ESL / Special Education Academic Support/G&T Differentiated Instruction	**Assessments** Formative Summative Benchmarks	**Pacing**
Obj: Select and use appropriate data displays (scatter plot, box-and-whisker plot, histogram, bar graph) **Obj:** Identify any outliers in a set of data **Obj**: Determine mean, median, mode and range of a set of data **Obj**: Select an appropriate measure of central tendency or other statistical measure to describe data	**HSPA review requires students to work quickly in solving both multiple choice questions and open-ended questions.** • Review HSPA reference sheet often. • Discuss real world example of positive vs negative correlation • Discuss trends and range • Identify outliers visually • Generate data • Find measures of central tendency • "Math Test" open-ended question • Discuss most appropriate measure to describe given data • "Average Contributions" open-ended question	• Extended time • Daily record-keeping assistance • Manipulatives • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • Classwork • Problem solving • Think and Discuss • Open-ended questions **Summative:** • Sample HSPA practice tests **Benchmark:** • HSPA practice tests	11 days

HSPA Prep: Financial Literacy **Grade: 12** **Date: May 2012**

NJ-CCSS **Domain** **Essential Questions**	**NJ-CCSS** **Cluster.Standard** **Standards for Mathematical Practice**
N-RN The Real Number System **N-Q** Quantities **A-CED** Creating Equations • How much should you budget for vacation? • What costs are involved? • What amounts need to be calculated?	**N-RN.1 Extend the properties of exponents to rational exponents.** Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents **N-Q.1 Reason quantitatively and use units to solve problems.** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. **A.CED.1 Create equations that describe numbers and relationships.** Create equations and inequalities in one variable and use them to solve problems. **SMP.1** Make sense of problems and preserver in solving them. **SMP.4** Model with mathematics.

Skills/Objectives SWBAT…	**Instructional Strategies** Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	**Modifications** ESL / Special Education Academic Support/G&T Differentiated Instruction	**Assessments** Formative Summative Benchmarks	**Pacing**
Obj: Research vacation destinations **Obj:** Create a vacation budget **Obj:** Calculate costs of a vacation and compare to original budget	**Financial Literacy helps students develop mathematical skills needed to become a productive member of society.** • Discuss how to conduct research using computers • Demonstrate appropriate and useful web sites • Provide worksheets to be used for calculations • Discuss the need for budgets • Review mathematics needed to calculate costs • Compare budget to researched calculations **Materials/Technology/Resources:** Computers, calculators, worksheets **Interdisciplinary Connections:** Business	• Extended time • Daily record-keeping assistance • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • Research • Class work • Problem solving activities • Think and Discuss • Open-ended questions **Summative:** • Mathematical calculation tests • Final project presentation	7 days

HSPA Prep: Financial Literacy **Grade: 12** **Date: May 2012**

NJ-CCSS **Domain** **Essential Questions**	**NJ-CCSS** **Cluster.Standard** **Standards for Mathematical Practice**
N-RN The Real Number System **N-Q** Quantities **A-CED** Creating Equations • How do you keep track of money? • Is the bank always right? • What do you do if you think something is wrong with a checking account?	**N-RN.1 Extend the properties of exponents to rational exponents.** Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents **N-Q.1 Reason quantitatively and use units to solve problems.** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. **A.CED.1 Create equations that describe numbers and relationships.** Create equations and inequalities in one variable and use them to solve problems. **SMP.1** Make sense of problems and preserver in solving them. **SMP.2** Reason abstractly and quantitatively **SMP.7** Look for and make use of structure

Skills/Objectives SWBAT…	**Instructional Strategies** Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	**Modifications** ESL / Special Education Academic Support/G&T Differentiated Instruction	**Assessments** Formative Summative Benchmarks	**Pacing**
Obj: Write checks **Obj:** Maintain a checkbook **Obj**: Create deposit slips **Obj:** Balance a checkbook **Obj**: Reconcile a bank statement **Obj:** Understand how to challenge discrepancies	**Financial Literacy helps students develop mathematical skills needed to become a productive member of society.** • Demonstrate how to write a check – students will practice • Using real life examples of banking – document checks, deposits, ATM withdrawals, and bank fees to maintain a checkbook with a running balance (several examples) • Reconcile a bank statement with checkbook (several example) • Discuss options of how to handle discrepancies **Materials/Technology/Resources:** Calculators, worksheets **Interdisciplinary Connections:** Business	• Extended time • Daily record-keeping assistance • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • Class work • Problem solving activities • Think and Discuss • Open-ended questions **Summative:** • Check writing quiz • Check book quiz • Reconcile quiz	20 days

HSPA Prep: Financial Literacy **Grade: 12** **Date: May 2012**

NJ-CCSS **Domain** **Essential Questions**	**NJ-CCSS** **Cluster.Standard** **Standards for Mathematical Practice**
N-RN The Real Number System **N-Q** Quantities **A-CED** Creating Equations • How much money can you make a year? • How much money a month will it cost you to live? • Can you balance how much you earn and how much you spend?	**N-RN.1 Extend the properties of exponents to rational exponents.** Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents **N-Q.1 Reason quantitatively and use units to solve problems.** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. **A.CED.1 Create equations that describe numbers and relationships.** Create equations and inequalities in one variable and use them to solve problems. **SMP.1** Make sense of problems and preserver in solving them. **SMP.2** Reason abstractly and quantitatively **SMP.4** Model with mathematics

Skills/Objectives SWBAT…	**Instructional Strategies** Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	**Modifications** ESL / Special Education Academic Support/G&T Differentiated Instruction	**Assessments** Formative Summative Benchmarks	**Pacing**
Obj: Research jobs and salaries **Obj:** Research cost of living in New Jersey **Obj:** Create a monthly budget **Obj:** Compare and contrast income and expenses	**Financial Literacy helps students develop mathematical skills needed to become a productive member of society.** • Research job offerings and comparative salaries in New Jersey • Research cost of living (i.e., rent, utilities, food, etc.) in New Jersey • Create a monthly budget including all expenses • Discuss how to live within a budget (no matter how big or small) **Materials/Technology/Resources:** Computers, calculators, worksheets **Interdisciplinary Connections:** Business	• Extended time • Daily record-keeping assistance • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • Research • Class work • Problem solving activities • Think and Discuss • Open-ended questions **Summative:** • Mathematical calculation tests • Final project presentation	11 days

HSPA Prep: Financial Literacy **Grade: 12** **Date: May 2012**

NJ-CCSS Domain Essential Questions	NJ-CCSS Cluster.Standard Standards for Mathematical Practice
N-RN The Real Number System **N-Q** Quantities **A-CED** Creating Equations • Is using a credit card always a good idea? • What are some benefits of credit? • What are some dangers of credit?	**N-RN.1 Extend the properties of exponents to rational exponents.** Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents **N-Q.1 Reason quantitatively and use units to solve problems.** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. **A.CED.1 Create equations that describe numbers and relationships.** Create equations and inequalities in one variable and use them to solve problems. **SMP.1** Make sense of problems and preserver in solving them. **SMP.2** Reason abstractly and quantitatively **SMP.4** Model with mathematics

Skills/Objectives SWBAT…	Instructional Strategies Activities/ Materials /Technology Interdisciplinary Connections Cultural Diversity	Modifications ESL / Special Education Academic Support/G&T Differentiated Instruction	Assessments Formative Summative Benchmarks	Pacing
Obj: Develop an understanding of credit **Obj:** Calculate how much items bought on credit really cost **Obj**: Understand how to read a credit card statement **Obj:** Develop a knowledge of how to challenge discrepancies	**Financial Literacy helps students develop mathematical skills needed to become a productive member of society.** • Discuss practical money skills and features of a credit card • Calculate how much items cost bought on credit as it related to saving for a given item • Read and discuss how to interpret a credit card statement • Discuss legalities of credit card businesses **Materials/Technology/Resources:** Computers, calculators, worksheets **Interdisciplinary Connections:** Business	• Extended time • Daily record-keeping assistance • Simulations • "Think alouds" • Stations/centers • Small group instruction • Pair-share	**Formative:** • Class work • Problem solving activities • Think and Discuss • Open-ended questions **Summative:** • Mathematical calculation tests • Credit card test	7 days

North Brunswick Township High School

(2195/2196) Math Lab IV
Grade 12
5 credits - 1 year (Does not satisfy the High School core mathematics requirement.)

Course Description
Math Lab IV is a senior course strictly for those students who have not passed the HSPA. Students will review their basic skills problem-solving techniques. The areas of concentration are: patterns, data analysis, measurement and geometry, numerical operations, discrete math and fundamentals of algebra. If students are unsuccessful in the HSPA test, they will remain in this course to complete the Alternative High School Assessment (AHSA, formerly SRA) process. This is an alternative assessment which will enable the student to receive a diploma. A scientific calculator is required.

Proficiencies
Proficiencies are based upon the topics included in the HSPA:

I. Number Sense, Concepts, and Applications
   A. Understanding types of numbers, our numeration system, and the ways they are used and applied in real-world situations.
   B. Apply ratios, proportions, and percents to a variety of situations.

II. Spatial Sense and Geometry
   A. Recognize, visualize, analyze, and apply geometric properties, relationships, and patterns in real-world and/or problem –solving contexts using models, manipulatives, or technology.
   B. Use coordinate geometry in problem-solving situations and apply the principals of congruence, similarity, and transformations.
   C. Apply the principal of measurement and geometry to solve problems involving direct and indirect measurement.

III. Data Analysis, Probability, Statistics, and Discrete Mathematics
   A. Determine, interpret, and use probabilities of simple ad compounded events.
   B. Understand and interpret statistical distributions and apply to real-world situations.
   C. Collect, organize, represent, analyze, and interpret data.
   D. Apply the concepts and methods of discrete mathematical to model and explore a variety of practical situations.
   E. Use iterative and recursive processes to model a variety of practical situations and solve problems.

IV. Patterns, Functions, and Algebra
   A. Recognize, create, and extend a variety of patterns ad use inductive reasoning to understand and represent mathematical and other real-world phenomena.
   B. Use various types of functions to represent mathematical or real-world situations.
   C. Use algebraic concepts and processes to concisely express, analyze, and model real-world situations.

Financial Literacy
   A. Budget for vacation
   B. Balance checkbook
   C. Create monthly budget
   D. Understand credit

Evaluation:

Performance Assessments Tests/Quizzes/Projects	50%
Weekly Performance Grades: Homework/Classwork/Do-nows	50%