

**NJCCCS AREA: Mathematics**  
**North Brunswick Township Public Schools**

**Honors Algebra 1**

*Acknowledgements*

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**Board Adoption\_\_\_\_\_**

## **COURSE DESCRIPTION**

*Honors Algebra I* is a rigorous college-preparatory course encompassing functions and their graphs, algebraic concepts, linear and quadratic equations, inequalities and systems of equations. Problem solving, calculator applications and applications of abstract concepts will provide students with a strong base to continue the study of high-level mathematics. Teacher recommendation, middle school math grades and standardized test scores will be reconsidered in June before final student placement in this course is determined. A scientific calculator or TI-83<sup>+</sup> graphing calculator is recommended.

## Units 1 & 2: Variables, Function Patterns, and Graphs

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<ul style="list-style-type: none"> <li>Review variables, function patterns, rational numbers, and graphs</li> </ul>	Textbook Workbook Calculators	Students complete Chapter 2 Cumulative Review Reinforce key concepts Cooperative practice	Teacher-made test on Chapters 1 & 2	2 Days	4.1.12.A.1, 2 4.1.12.B.1, 4

### Unit 3: Solving Equations

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>NJ Workout for Chapter 3 – complete by the end of Chapter 3</i>				<i>0.5 days</i>	
<i>Independent assignment to be completed prior to proportion and percents review- p 762</i>					
3.1 <ul style="list-style-type: none"> <li>Solve 2-step equations</li> <li>Use deductive reasoning</li> <li>Use a table and graph to solve equations</li> </ul>	Textbook Practice Sheets Transparency Graphing calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative Hands on Activity lab p 125	Student oral responses Class discussions Class work practice problems Homework	1 Day	4.3.C.2 4.3.D.2,4
3.2 <ul style="list-style-type: none"> <li>Combine like terms</li> <li>To use the distributive property when combining like terms and solving equations</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Board work Homework	2 Days	4.1.12.B.1
3.3 <ul style="list-style-type: none"> <li>To solve equations with variables on both sides</li> <li>To identify equations that are identities or are no solution</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice Using a table to solve equations	Student oral responses Quiz 3.1 to 3.3 Homework	2 Days	4.3.12.C.1d, 4.3.12.B.2g
Transforming formulas <ul style="list-style-type: none"> <li>Solve a literal equation for one of its variables</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion	Student oral responses Homework	1 Day	4.5.C.4,5 4.5.E.1

### Chapter 3: Solving Equations

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
3.4 <ul style="list-style-type: none"> <li>• To find ratios and rates</li> <li>• To solve proportions</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice Store circulars	Student oral responses Class work practice problems Homework	1 Day	4.1.B.4
3.5 <ul style="list-style-type: none"> <li>• To find missing measures of similar figures</li> <li>• To use similar figures when measuring indirectly</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice Scale drawing activity	Student oral responses Board work Homework	2 Day	4.5.E.2, 4.2.12.E.1a
3.6 <ul style="list-style-type: none"> <li>• To define a variable in terms of another variable</li> <li>• To model distance-rate-time problems</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Diagrams for word problems Class notes Discussion Practice with partner	Student oral responses Class discussions Quiz 3.4 to 3.6 Homework	3 Days	4.3.12.D.1a, 1b, 2a, 4.5.E.1b
Proportions and Percents Review <ul style="list-style-type: none"> <li>• To use the basic percent proportion to solve percent problems (p.166-167)</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice	Student oral responses Class work practice problems Homework	1 Day	4.3.D.2,4, 4.5.A.1,2, 4.5.E.

### Unit 3: Solving Equations

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
3.7 <ul style="list-style-type: none"> <li>• Find percent of change</li> <li>• Solve problems involving percent of change</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice Real world examples Using web to find prices	Student oral responses Class discussions Homework	1 Day	4.3.D.2,4 4.5.A.1,2 4.5.E.2
Review: Review for Chapter 3 exam (3.1 to 3.7)	Textbook Practice Sheets Transparency Calculators	Small group complete enrichment activity (alternate assessment) Textbook Practice Sheets		1 Day	
Exam: Assess knowledge of algebra concepts and simple equations			Chapter 3 Exam Multiple choice, free response, open ended questions	1 Day	

**Unit: Radicals**

<b>OBJECTIVES</b>	<b>MATERIALS/ MANIPULATIVES</b>	<b>SUGGESTED STRATEGIES</b>	<b>ASSESSMENT State, Teacher-made, District</b>	<b>PACING</b>	<b>NJ CORE CURRICULUM STANDARD</b>
3.8 <ul style="list-style-type: none"> <li>To find square roots</li> <li>To estimate and use square roots</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Using distance formula Review use of calculator Practice	Student oral responses Class work practice problems Homework	1 Day	4.1.12.A.2, 4.5.F.4
11.1 <ul style="list-style-type: none"> <li>To simplify radicals</li> <li>To simplify radicals by rationalizing the denominator</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes: review perfect squares Discussion Practice independent/cooperative	Student oral responses Board work Homework	3 Days	4.1.12.B.4
11.2 <ul style="list-style-type: none"> <li>To simplify sums and differences of radicals</li> <li>To simplify products of radicals</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion: review adding like terms Practice independent/cooperative	Student oral responses Class work practice problems Homework	2 Days	4.1.12.B.4, 4.1.12.B.1
3.9 <ul style="list-style-type: none"> <li>To solve problems using the Pythagorean Theorem</li> <li>To identify right triangles</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Video on Pythagorean Th Practice independent/cooperative	Student oral responses Class discussions Quiz Radicals Homework	2 Days	4.2.12.A.1, 4.2.12.A.4a, 4.2.12.E.1b

### Unit 4: Solving Inequalities

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>NJ Workout for Chapter 4 – complete by the end of Chapter 4</i>					<i>0.5 days</i>
4.1 <ul style="list-style-type: none"> <li>To identify solutions of inequalities</li> <li>To graph and write inequalities</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Emphasis on number line Class notes Discussion Practice independent/cooperative	Student oral responses Board work Homework	1 Day	4.5.E.1d
4.2 <ul style="list-style-type: none"> <li>Use addition and subtraction to solve one-step inequalities</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Emphasis on number line Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	1 Day	4.3.D.3 4.5.C.6 4.3.D.1,3
4.3 <ul style="list-style-type: none"> <li>Use multiplication and division to solve one-step inequalities</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Numerical examples chart p 212 Class notes Discussion Practice independent/cooperative	Student oral responses Quiz 4.1 to 4.3 Homework	2 Days	4.3.D.3 4.5.C.6 4.3.D.1,3
4.4 <ul style="list-style-type: none"> <li>Solve multi-step inequalities and graph the solutions on a number line</li> <li>To solve multi-step inequalities with variables on both sides</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes: review multi-step equalities Discussion Practice independent/cooperative	Student oral responses Homework Class discussions Class work practice problems	1 Day	4.3.D.3 4.5.C.6 4.3.D.1,3



### Unit 4: Solving Inequalities

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
4.5 <ul style="list-style-type: none"> <li>Solve compound inequalities and graph solutions on a number line</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative Extension Activity p 233 (Venn diagrams)	Student oral responses Quiz 4.4 to 4.5 Homework	3 Days	4.3.D.3 4.5.C.6 4.3.D.1,3
4.6 <ul style="list-style-type: none"> <li>To solve equations that involve absolute values</li> <li>To solve inequalities that involve absolute values</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes: number lines Discussion Practice independent/cooperative	Student oral responses Board work Homework	2 Days	4.5.E.1d, 4.3.12.D.2a, 4.3.12.C.1c
Review: Review of chapter 4 for exam	Textbook Practice Sheets Transparency Calculators	Small group Textbook Practice Sheets		1 Day	
Exam: Assess knowledge of algebra concepts involved in solving equations and inequalities.			Chapter 4 Exam Multiple choice, free response, open ended questions	1 Day	

## Unit: Probability

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>Independent worksheet on finding areas to be completed prior to geometric probability lesson</i>					
<b>Refer to Probability Lesson Design</b>					
2.6 <ul style="list-style-type: none"> <li>• Find experimental probability</li> <li>• Predict outcomes using experimental probability</li> </ul>	Textbook Practice Sheets Handouts Calculators Number cubes	Do Now Illustrate text examples Class notes Discussion Hands-on Activity: Dice experiment	Student oral responses Class discussions Homework	0.5 Day	4.1.A.1 4.4.A.1-3
2.6 <ul style="list-style-type: none"> <li>• Find theoretical probability</li> <li>• Use tree diagram and a sample space to find probability</li> </ul>	Textbook Practice Sheets Handouts Calculators Smarties or markers	Do Now Illustrate text examples Class notes Discussion Theoretical Probability Activity	Student oral responses Class discussions Homework	0.5 Day	4.4.A.4-6
2.6 <ul style="list-style-type: none"> <li>• Construct a sample space from an event</li> <li>• Form a simple probability ratio</li> </ul>	Handouts Construction paper Paper clips Masking tape Scissors	Do now Spinning Activity	Student oral responses Quiz experimental and theoretical probability Homework	1 Day	4.4.A.4-6

**Unit: Probability**

<b>OBJECTIVES</b>	<b>MATERIALS/ MANIPULATIVES</b>	<b>SUGGESTED STRATEGIES</b>	<b>ASSESSMENT State, Teacher-made, District</b>	<b>PACING</b>	<b>NJ CORE CURRICULUM STANDARD</b>
2.7 <ul style="list-style-type: none"> <li>Find the probability of dependent and independent events</li> <li>Use equations to solve probability equations</li> </ul>	Textbook Practice Sheets Transparency Calculators Colored cubes Brown paper bags	Do Now Illustrate text examples Class notes Discussion Hands-on Activity: Double Yellow Activity	Student oral responses Homework	2 Days	4.4.C.1
12.7 12.8 <ul style="list-style-type: none"> <li>Use the multiplication counting principle to count outcomes</li> <li>Use permutations and combinations to count outcomes</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Permutation Activity	Student oral responses Board work Homework	2 Days	4.5.A.1-5 4.5.E.2 4.5.F.4
Review probability concepts	Textbook Calculator Practice sheets	Small group Textbook Practice Sheets		1 Day	
Exam: Students demonstrate understanding of probability			Exam on Probability Multiple choice, free response, open ended questions	1 Day	

## Unit 5: Graphs and Functions

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>NJ Workout for Chapter 5 – complete by the end of Chapter 5</i>				<i>0.5 days</i>	
5.1 <ul style="list-style-type: none"> <li>Interpret, sketch, and analyze graphs from situations</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice HSPA examples	Student oral responses Class discussions Homework	1 Day	4.5.E.3
5.2 <ul style="list-style-type: none"> <li>Define relations, function, domain and range</li> <li>Evaluate functions</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Mapping diagrams/vertical line test Class notes Discussion Practice independent/cooperative	Student oral responses Board work Homework	1 Day	4.3.12.B.1, 4.3.12.B.2b
5.3 <ul style="list-style-type: none"> <li>To model functions using rules, tables, and graphs</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes “Guess the Rule” using graphing calculator Practice independent/cooperative	Student oral responses Homework	1 Day	4.3.12.B.2d, 4.3.12.B.4a, 4.3.12.B.1
5.4 <ul style="list-style-type: none"> <li>Write rules for functions from tables and words</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Quiz 5.1 to 5.4 Homework	3 Days	4.3.12.B.1, 4.3.12.C.2

### Unit 5: Graphs and Functions

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
5.5 <ul style="list-style-type: none"> <li>• To write an equation of a direct variation</li> <li>• To use ratios and proportions with direct variations</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion	Student oral responses Small group presentations Homework	1 Days	4.3.12.B.1&C.2
5.6 <ul style="list-style-type: none"> <li>• To write an equation of an indirect variation</li> <li>• To use ratios and proportions with indirect variations</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion	Student oral responses Small group presentations Homework	1 Day	4.3.12.B.1&C.2
5.7 <ul style="list-style-type: none"> <li>• To use inductive reasoning in continuing number patterns</li> <li>• To write rules for arithmetic sequences</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Students create and present their own patterns	Student oral responses Small group presentations Homework	1 Day	4.1.12.A.3, 4.3.12.A.1a, 4.3.12.A.3
Review: Review skills in Chapter 5	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Small group Textbook Practice Sheets Vocabulary Review Puzzle Support file		1 Day	
Exam: To assess the students knowledge of chapter 5 skills			Chapter 5 Exam Multiple choice, free response, open ended questions	1 Day	

## Unit 6: Linear Equations and Their Graphs

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>NJ Workout for Chapter 6 – complete by the end of Chapter 6</i>				<i>0.5 days</i>	
6.1 <ul style="list-style-type: none"> <li>To find the rates of change from tables and graphs</li> <li>To find slope</li> </ul>	Textbook Practice Sheets Transparency Calculators Graphing calculator Overhead calculator	Do Now Illustrate text examples Class notes Discussion Hands on Activity lab p 316	Student oral responses Class discussions Homework	1 Days	4.3.12.B.2a, 4.3.12.B.2h, 4.5.E.3
6.2 <ul style="list-style-type: none"> <li>To write linear equations in slope intercept form</li> <li>To graph linear equations</li> </ul>	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Do Now Illustrate text examples Graphing Discussion Practice independent/cooperative	Student oral responses Board work Homework	2 Days	4.3.12.B.1, 4.3.12.B.2a, 4.3.12.B.2c
6.3 <ul style="list-style-type: none"> <li>To interpret linear graphs</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Problem solving with real world connections	Student oral responses Class discussions Homework	1 Day	4.5.E.3, 4.3.12.C.1a, 4.3.12.C.2, 4.3.12.B.1
6.4 <ul style="list-style-type: none"> <li>Graph equations using <math>x</math> &amp; <math>y</math> intercepts</li> <li>Write equations in <math>Ax + By = C</math> form</li> <li>Model situations with equations in form <math>Ax + By = C</math></li> </ul>	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Do Now Illustrate text examples Graphing activity p. 330 Discussion Practice independent/cooperative	Student oral responses Quiz 6.1 to 6.4 Homework	3 Days	4.5.F.1-4

## Unit 6: Linear Equations and Their Graphs

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
6.5 <ul style="list-style-type: none"> <li>To graph and write linear equations using point-slope form</li> <li>To write a linear equation using data</li> </ul>	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Do Now Illustrate text examples Class notes Graphing activity Practice independent/cooperative	Student oral responses Class work practice problems Homework	3 Days	4.3.12.B.1, 4.3.12.B.2a
6.6 <ul style="list-style-type: none"> <li>Write equations for parallel and perpendicular lines</li> <li>Use slope to determine if lines are parallel, perpendicular or neither.</li> </ul>	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Do Now Illustrate text examples Graphing calculator demonstration Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	2 Days	4.2.12.C.1d, 4.2.12.C.1e
6.7 <ul style="list-style-type: none"> <li>To write an equation for a trend line and use it to make predictions</li> </ul>	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Do Now Illustrate text examples Class notes Discussion Practice: group activity placing line of best fit on graph	Student oral responses Class discussions Quiz 6.5 to 6.7 Homework	2 Days	4.3.12.D.1, 4.5.E.3, 4.4.12.A.4
6.8 <ul style="list-style-type: none"> <li>To translate the graph of an absolute value equation</li> </ul>	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Do Now Illustrate text examples Graphing calculator demonstration Class notes Discussion Practice independent/cooperative Hands on Activity lab p 358	Student oral responses Homework	1 Day	4.3.12.B.1

## Unit 6: Linear Equations and Their Graphs

<b>OBJECTIVES</b>	<b>MATERIALS/ MANIPULATIVES</b>	<b>SUGGESTED STRATEGIES</b>	<b>ASSESSMENT State, Teacher-made, District</b>	<b>PACING</b>	<b>NJ CORE CURRICULUM STANDARD</b>
Review: Review chapter 6 for exam	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Small group Textbook Practice Sheets Student prepared test questions	Student oral responses Homework	1 Day	
Exam: Assess knowledge of linear equations and their graphs			Chapter 6 exam Alternate assessment Activity lab p 370-371	1 Day	



## Unit 7: Systems of Equations and Inequalities

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>NJ Workout for Chapter 7 – complete by the end of Chapter 7</i>				<i>0.5 days</i>	
7.1 <ul style="list-style-type: none"> <li>Solve systems of linear equations by graphing</li> </ul>	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Do Now Illustrate text examples Graphing with color pencils Class notes Discussion Key concepts p.376 Practice independent/cooperative	Student oral responses Class work practice problems Homework	2 Days	4.3.12.B.2g, 4.5.E.2, 4.5.C.2, 4.5.D.4, 4.2.12.C.1c
7.2 <ul style="list-style-type: none"> <li>Solve systems of linear equations by substitution</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Board work Homework	2 Days	4.3.12.D.2a, 4.5.E.3, 4.3.12.D.1a, 1b
7.3 <ul style="list-style-type: none"> <li>Solve systems of linear equations using elimination</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Quiz 7.1 to 7.3 Homework	3 Days	4.3.12.D.2a, 4.5.E.3, 4.3.12.D.1a, 1b
7.4 <ul style="list-style-type: none"> <li>Write and solve systems of linear equations</li> <li>Use systems to find the break even point</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class discussions Homework	2 Days	4.3.12.D.2a, 4.5.E.3, 4.3.12.C.1a

### Unit 7: Systems of Equations and Inequalities

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
7.5 <ul style="list-style-type: none"> <li>Graph linear inequalities</li> </ul>	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Do Now Illustrate text examples Graphing with color pencils Class notes Discussion Practice independent/cooperative	Student oral responses Board work Homework	1 Day	4.3.C.1
7.6 <ul style="list-style-type: none"> <li>Solving systems of linear inequalities by graphing</li> </ul>	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Do Now Illustrate text examples Graphing with color pencils Class notes Discussion Practice independent/cooperative	Student oral responses Class discussions Homework	2 Days	4.5.D.2,5 4.3.C.1
Review: Review chapter 7 for exam	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Small group Choose a method activity Textbook Practice Sheets	Student oral responses Class work practice problems  Homework	1 Day	
Exam: Assess knowledge of systems of equations and inequalities			Chapter 7 exam Multiple choice, free response, open ended questions	1 Day	

### Unit 8: Exponents and Exponential Functions

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>HSPA Workout for Chapter 8 – complete by the end of Chapter 8</i>				<i>0.5 days</i>	
8.1 <ul style="list-style-type: none"> <li>Evaluate and simplify expressions in which zero and negative numbers are used as exponents</li> </ul>	Textbook Practice Sheets Transparency Calculators Graph paper Overhead calculator	Do Now Illustrate text examples Complete chart p. 430 Class notes Discussion Practice independent/cooperative	Student oral responses Board work Homework	1 Day	4.1.B.2,4
8.2 <ul style="list-style-type: none"> <li>Write numbers in scientific notation and use scientific notation</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Web site on powers of ten Review use of calculator Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	1 Day	4.3.A.1
8.3 <ul style="list-style-type: none"> <li>Multiply powers with the same base</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Complete the chart p. 441 Class notes Discussion Practice independent/cooperative Enrichment: Error analysis p. 444; 44-47	Student oral responses Homework	1 Day	4.1.B.4

### Unit 8: Exponents and Exponential Functions

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
8.4 • Use two additional multiplication properties of exponents	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Complete the chart p. 447 Class notes Discussion	Student oral responses Quiz 8.1 to 8.4 Homework	3 Days	4.5.C.1,2
8.5 • Apply division properties of exponents	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Board work Homework	1 Day	4.5.C.1,2
8.6 • To identify geometric sequences	Textbook Practice Sheets Transparency Calculators	Do Now Class notes Discussion Practice independent/cooperative	Student oral responses Class discussions Homework	1 Day	4.3.12.C.1 4.5.E.1
8.7 • Examine patterns in exponential functions	Textbook Practice Sheets Transparency Calculators	Do Now Online active math p.468 Discussion Practice independent/cooperative	Student oral responses Class discussions Homework	1 Day	4.3.C.1-3
8.8 • Model exponential growth and decay	Textbook Practice Sheets Transparency Calculators	Do Now Class notes Practice independent/cooperative	Student oral responses Class work practice problems Homework	2 days	4.3.12.C.1 4.5.E.1c
Review: Review skills with exponents	Textbook Practice Sheets Calculators	Textbook Small Groups Practice Sheets	Student oral responses Class work practice Homework	1 Day	
Exam: To assess students knowledge of skills with exponents			Chapter 8 exam Mult choice, free response, OE questions	1 Day	

## Unit 9: Polynomials and Factoring

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>NJ Workout for Chapter 9 – complete by the end of Chapter 9</i>				<i>0.5 days</i>	
9.1 <ul style="list-style-type: none"> <li>Describe polynomials</li> <li>Add and subtract polynomials</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Geometric examples p. 497; 39-40 Discussion Practice independent/cooperative	Student oral responses Board work Homework	2 Days	4.3.D.1,3
9.2 <ul style="list-style-type: none"> <li>Multiply a monomial by a polynomial</li> <li>Factor a monomial from a polynomial</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	2 Days	4.3.D.1,3
9.3 <ul style="list-style-type: none"> <li>Multiply two binomials</li> <li>Multiply a trinomial and a binomial</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice Activity lab; Algebra tiles p.504	Student oral responses Homework	2 Days	4.3.D.1,3
9.4 <ul style="list-style-type: none"> <li>To find the square of a binomial</li> <li>To find the difference of squares</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice Geometric applications p. 515; 26-27	Student oral responses Quiz 9.1 to 9.4 Homework	2 Days	4.3.12.D.1b, 4.5.E.1b, 4.5.C.2

### Unit 9: Polynomials and Factoring

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
9.5 <ul style="list-style-type: none"> <li>Factor trinomials (<math>a = 1</math>)</li> <li>Identify trinomials that cannot be factored</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class discussions Homework	2 Days	4.3.D.1,3
9.6 <ul style="list-style-type: none"> <li>Factor trinomials of the type <math>ax^2 + bx + c</math></li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Board work Homework	2 Days	4.3.D.1,3
9.7 <ul style="list-style-type: none"> <li>Factor the difference of two squares</li> <li>Factor perfect square trinomials</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Board work Homework	1 Day	4.3.D.1,3
9.8 <ul style="list-style-type: none"> <li>To factor polynomials with four terms</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	1 Day	4.3.12.D.1c, 4.1.12.B.1

### Unit 9: Polynomials and Factoring

<b>OBJECTIVES</b>	<b>MATERIALS/ MANIPULATIVES</b>	<b>SUGGESTED STRATEGIES</b>	<b>ASSESSMENT State, Teacher-made, District</b>	<b>PACING</b>	<b>NJ CORE CURRICULUM STANDARD</b>
Review: Review skills with polynomials	Textbook Practice Sheets Transparency Calculators	Textbook Small Groups Practice Sheets Review stations with factoring	Student oral responses Quiz and test questions Homework	1 Day	
Exam: To assess students knowledge of skills with polynomials			Chapter 9 exam Multiple choice, free response, open ended questions	1 Day	

## Unit 10: Quadratic Equations and Functions

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>NJ Workout for Chapter 10 – complete by the end of Chapter 10</i>				<i>0.5 days</i>	
10.1 <ul style="list-style-type: none"> <li>To graph quadratic functions of the form <math>y=ax^2</math> and <math>y= ax^2+c</math></li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	2 Day	4.3.12.B.1, 2e, 4.3.12.B.4b
10.2 <ul style="list-style-type: none"> <li>To graph quadratic functions of the form <math>y= ax^2+bx+c</math></li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	2 Days	4.3.12.B.1, 2e, 4.3.12.B.4b
10.3 <ul style="list-style-type: none"> <li>To solve quadratic equations using square roots</li> <li>To solve quadratic equations by graphing</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Teacher demonstration: Activity lab p 571	Student oral responses Board work Homework	2 Days	4.3.12.B.2c, 2f, 4.3.12.D.2c, 4.3.12.B.1
10.4 <ul style="list-style-type: none"> <li>To solve quadratic equations by factoring</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Review zero –product property Practice independent/cooperative	Student oral responses Quiz 10.3 and 10.4 Homework	3 Days	4.3.12.D.2b, 4.5.C.2
10.5 <ul style="list-style-type: none"> <li>To solve quadratic equations by completing the square</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	1 Day	4.5.E.1a



### Unit 10: Quadratic Equations and Functions

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
10.6 <ul style="list-style-type: none"> <li>To use the quadratic formula when solving quadratic equations</li> <li>To choose an appropriate method for solving quadratic equations</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class discussions Homework	2 Days	4.3.12.D.2b, 4.5.E.3, 4.5.A.2d
10.7 <ul style="list-style-type: none"> <li>To find the number of solutions of a quadratic equation</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Graphing calculator demonstration Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	1 Day	4.3.12.D.2b, 4.5.E.3, 4.5.A.2d
10.8 <ul style="list-style-type: none"> <li>To choose a linear, quadratic, or exponential model for data</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	1 Day	4.3.12.B.1,4a
Review: Chapter 10 review for exam	Textbook Practice Sheets Transparency	Textbook Small Groups Practice Sheets		1 Day	
Exam: Assess student knowledge of quadratic equations and functions			Chapter 10 exam Multiple choice, free response, open ended questions	1 Day	

### Unit 11: Radical Expressions & Equations

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>NJ Workout for Chapter 11 – complete by the end of Chapter 11</i>				<i>0.5 days</i>	
11.3 <ul style="list-style-type: none"> <li>To solve equations containing radicals</li> <li>To identify extraneous solutions</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Use GPS on p. 635 Practice independent/cooperative	Student oral responses Board work Homework	2 Days	4.1.12.B.1,2,4
11.4 <ul style="list-style-type: none"> <li>To graph square root functions</li> <li>To translate graphs of square root functions</li> </ul>	Textbook Practice Sheets Transparency Graphing calculators	Do Now Illustrate text examples Graph functions Practice independent/cooperative	Student graphs Class work Homework Quiz 11.3-11.4	3 Days	4.3.12.B.1
11.5 <ul style="list-style-type: none"> <li>To find trigonometric ratios and solve problems using trig ratios</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	2 Days	4.2.12.E.1c
11.6 <ul style="list-style-type: none"> <li>To use trig functions to solve angle of elevation and angle of depression problems</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class discussions Homework	1 Day	4.2.12.E.1c 4.5.C.4
Review: Chapter 11 review for exam	Textbook Practice Sheets Transparency	Textbook Small Groups Practice Sheets		1 Day	
Exam: Assess student knowledge of radical expressions and equations			Chapter 11 exam Multiple choice, free response, open ended questions	1 Day	

## Unit 12: Rational Expressions and Functions

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
<i>NJ Workout for Chapter 12 – complete by the end of Chapter 12</i>				<i>0.5 days</i>	
12.1 <ul style="list-style-type: none"> <li>To graph rational functions</li> <li>To compare families of functions</li> </ul>	Textbook Practice Sheets Transparency Graphing calculators	Do Now Illustrate text examples Graph functions Practice independent/cooperative	Student graphs Class work Homework Quiz	2 Days	4.3.12.B.1 4.5.F.3
12.2 <ul style="list-style-type: none"> <li>To simplify rational expressions</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework Checkpoint Quiz	2 Days	4.3.12.D.1c
12.3 <ul style="list-style-type: none"> <li>To multiply and divide rational expressions</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Teacher demonstration: Activity lab p 571	Student oral responses Board work Homework	2 Days	4.3.12.D.1 4.1.12.B.1
12.4 <ul style="list-style-type: none"> <li>To divide polynomials</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Review zero –product property Practice independent/cooperative	Student oral responses Homework Quiz 12.1-12.4	2 Days	4.3.12.D.1 4.1.12.B.1
12.5 <ul style="list-style-type: none"> <li>To add and subtract rational expressions with like and unlike denominators</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class work practice problems Homework	2 Days	4.1.12.B.1

## Unit 12: Rational Expressions and Functions

OBJECTIVES	MATERIALS/ MANIPULATIVES	SUGGESTED STRATEGIES	ASSESSMENT State, Teacher-made, District	PACING	NJ CORE CURRICULUM STANDARD
12.6 <ul style="list-style-type: none"> <li>• To solve rational equations</li> <li>• To solve rational proportions</li> </ul>	Textbook Practice Sheets Transparency Calculators	Do Now Illustrate text examples Class notes Discussion Practice independent/cooperative	Student oral responses Class discussions Homework	2 Days	4.1.12.B.1 4.3.12.D.1 4.5.D.4
Review: Chapter 12 review for exam	Textbook Practice Sheets Transparency	Textbook Small Groups Practice Sheets		1 Day	
Exam: Assess student knowledge of rational expressions and functions			Chapter 12 exam Multiple choice, free response, open ended questions	1 Day	

## **BIBLIOGRAPHY**

### Text:

Primary textbook used throughout this course:

*Algebra I* Bellman/Bragg/Charles/Hall/Handlin/Kennedy, Prentice Hall, 2009

### Materials:

Text, Transparencies, student workbooks, Data Analysis Lesson Design, Probability Lesson Design

### Technology:

Graphing calculators, computers, Algebra software

## Linwood Middle School

Honors Algebra I  
Grades 7 & 8

Course Description:

*Honors Algebra I* is a rigorous college-preparatory course encompassing functions and their graphs, algebraic concepts, linear and quadratic equations, inequalities and systems of equations. Problem solving, calculator applications and applications of abstract concepts will provide students with a strong base to continue the study of higher-level mathematics. Teacher recommendation, middle school math grades and standardized test scores will be reconsidered in June before final student placement in this course is determined. A scientific calculator or TI-83<sup>+</sup> graphing calculator is recommended.

Proficiencies:

At the completion of the course the student should be able to:

1. Use integers and fractions to represent relationships in graphs and with variables and represent relationships among sets of data by use of matrices and spreadsheets.
2. Interpret scatter plots, graphs and functions while modeling real-world situations.
3. Find probabilities and use the counting principle to determine outcomes.
4. Solve and graph equations and inequalities with one variable.
5. Graph linear equations with two variables by investigating rate of change and slope of a line and determine the equation of a line given specific information about the line.
6. Solve linear systems of equations and inequalities.
7. Solve quadratic equations using square roots, the quadratic formula, and factoring.
8. Simplify expressions using multiplication, power, and division properties of exponents.
9. Apply square roots and exponents to solving problems involving Pythagorean Theorem, and the distance formula; perform operations on radical expressions and solve radical equations.
10. Add, subtract, and multiply polynomials.
11. Simplify rational expressions and solve rational equations.
12. Use trigonometric ratios to solve right triangles.

Course Requirements:

1. Students will be expected to maintain a high level of participation and preparedness. Students are expected to bring necessary supplies to class daily.
2. Students will be expected to attend class regularly.
3. Students will be expected to complete all assignments.
4. Students will be expected to successfully accomplish all graded work to include unit tests, quizzes, and reports and all class projects.
5. Students will be cooperative in class and contribute to the growth of the class.

Evaluation Procedures:

Marking period grades will be determined by:

Performance assessments	80%
Homework	15%
Classwork/Preparedness	5%

Revised: July 2008