

# Algebra 2 Honors

## Course Compendium

**ALGEBRA 2 HONORS Credits: 5**

**Prerequisites: Placement Grade 9, Geometry Honors OR Algebra 1 CP with a final average of 91 AND Geometry CP with a final average of 91 with teacher recommendation Grades: 9, 10, 11**

### UNITS OF STUDY\*

- Unit 1- Quadratic Equations, Functions, and Systems
- Unit 2- Polynomial Equations and Functions
- Unit 3- Exponents, Roots and Radicals
- Unit 4- Logarithms and Applications of Exponential Functions
- Unit 5- Rational Equations and Functions
- Unit 6- Trigonometric Equations and Functions
- Unit 7- Sequences and Series
- Unit 8- Statistics

This course differs from the non-honors course in the scope, pace and level of difficulty. This course is intended to build upon student work with linear, quadratic, and exponential functions. Students extend their repertoire of functions to include polynomial, rational, and radical functions. Students work closely with the expressions that define the functions, and continue to expand and hone their abilities to model situations and to solve equations, including solving quadratic equations over the set of complex numbers and solving exponential equations using the properties of logarithms. Through the Mathematical Practice Standards students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

### INTERDISCIPLINARY CONNECTIONS

#### **NJSLS Companion Standards Grades 9-12 (Reading & Writing in Science & Technical Subjects)**

**RST.9-10.7.** Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

**RST.11-12.3.** Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

**RST.11-12.4.** Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.

#### **21st Century Life and Careers**

**CRP1.** Act as a responsible and contributing citizen and employee.

**CRP2.** Apply appropriate academic and technical skills.

**CRP4.** Communicate clearly and effectively and with reason.

**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.

**CRP11.** Use technology to enhance productivity.

*\*See individual units for Pacing Guide, NJSLS Standards, Transfer Skills, Enduring Understandings, Essential Questions, Learning Objectives, Key Vocabulary, Skills, Resources, & Assessments*

**9.3.ST-SM.4** Apply critical thinking skills to review information, explain statistical analysis, and to translate, interpret and summarize research and statistical data.

## Technology

**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.

## MODIFICATIONS / ACCOMMODATIONS

GENERAL CONSIDERATIONS FOR DIVERSE LEARNERS		
English Language Learners	Students Receiving Special Education Services	Advanced Learners
<ul style="list-style-type: none"> <li>- Personal glossary</li> <li>- Text-to-speech</li> <li>- Extended time</li> <li>- Simplified / verbal instructions</li> <li>- Frequent breaks</li> </ul> <p><a href="#">WIDA Can Do Descriptors for Grade 9-12</a>  <a href="#">WIDA Essential Actions Handbook</a>  <a href="#">FABRIC Paradigm</a>  <a href="#">Wall Township ESL Grading Protocol</a></p> <p>Use WIDA Can Do Descriptors in coordination with Student Language Portraits (SLPs).</p>	<ul style="list-style-type: none"> <li>- Small group/One to one</li> <li>- Additional time</li> <li>- Review of directions</li> <li>- Student restates information</li> <li>- Space for movement or breaks</li> <li>- Extra visual and verbal cues and prompts</li> <li>- Preferential seating</li> <li>- Follow a routine/schedule</li> <li>- Rest breaks</li> <li>- Verbal and visual cues regarding directions and staying on task</li> <li>- Checklists</li> <li>- Immediate feedback</li> </ul> <p>Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.</p> <p><a href="#">Considerations for Special Education Students 6-12</a>  <a href="#">National Center on Universal Design for Learning - About UDL</a>  <a href="#">UDL Checklist</a>  <a href="#">UDL Key Terms</a></p>	<ul style="list-style-type: none"> <li>- Use of high level academic vocabulary/texts</li> <li>- Problem-based learning</li> <li>- Pre-assess to condense curriculum</li> <li>- Interest-based research</li> <li>- Authentic problem-solving</li> <li>- Homogeneous grouping opportunities</li> </ul> <p><a href="#">Knowledge and Skill Standards in Gifted Education for All Teachers Pre-K-Grade 12 Gifted Programming Standards</a>  <a href="#">Gifted Programming Glossary of Terms</a></p>
		<b>Students with 504 Plan</b>
		Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.

*\*See individual units for Pacing Guide, NJSL Standards, Transfer Skills, Enduring Understandings, Essential Questions, Learning Objectives, Key Vocabulary, Skills, Resources, & Assessments*

<b>At Risk Learners / Differentiation Strategies</b>		
Alternative Assessments Group Investigations Homogeneous Grouping Online Math Practice Use of Collaboration of Various Activities	Independent Research & Projects Project-Based Learning Varied Supplemental Activities Tiered Activities/Assignments Choice of Activities Mini-Workshops to Reteach or Extend	Think-Pair-Share by readiness Flexible Grouping Homework Options Open-Ended Activities Stations/Centers Work Alone/Together

*\*See individual units for Pacing Guide, NJSLS Standards, Transfer Skills, Enduring Understandings, Essential Questions, Learning Objectives, Key Vocabulary, Skills, Resources, & Assessments*