

# Math 8

## Course Compendium

### **UNITS OF STUDY\***

Unit 1- *Real Numbers: 3 weeks, September*

Unit 2- *Analyze and Solve Linear Equations, 5 weeks, September & October*

Unit 3- *Use Functions to Model Relationships, 4 weeks, November & December*

Unit 4- *Investigate Bivariate Data: 3 weeks, December*

Unit 5- *Analyze and Solve Systems of Linear Equations: 4 weeks, January*

Unit 6- *Congruence and Similarity: 6 weeks, February & March*

Unit 7- *Understand and Apply the Pythagorean Theorem: 5 weeks, April & May*

Unit 8- *Solve Problems Involving Surface Area and Volume: 4 weeks, May & June*

### **INTERDISCIPLINARY CONNECTIONS**

**Unit 1 STEM Project: “Going, Going, Gone?” Next Generation Science Standards: MS-PS1-3, MS-ESS3-1, MS-ESS3-4, MS-ETS1-1**

**Unit 2 STEM Project “Modeling Population Growth” Next Generation Science Standards: MS-LS201, MS-LS2-4, MS-ESS3-4**

**Unit 3 STEM Project “Modeling Population Growth” Next Generation Science Standards: MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4**

**Unit 4 STEM Project “How Many Fish?” Next Generation Science Standards: MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4**

**Unit 5 STEM Project “Daily Grind” Next Generation Science Standards: MS-LS1-5, MS-LS2-1, MS-ESS3-3, MS-ESS3-4**

**Unit 6 STEM Project “Forest Health” Next Generation Science Standards: MS-LS2-1, MS-LS2-4, MS-ESS3-3, MS-ESS3-4**

**Unit 7 STEM Project: “Rainy Days” Next Generation Science Standards: MS-ESS3-1, MS-ESS3-3, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4**

**Unit 8 STEM Project: “Wrap It Up” Next Generation Science Standards: MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4, MS-ESS3-3**

### **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.**

**CRP6. Demonstrate creativity and innovation.**

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

**CRP10. Plan education and career paths aligned to personal goals.**

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

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9.2.8.B.3 Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, 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.

## Technology

8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools.

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.

8.1.8.D.2 Demonstrate the application of appropriate citations to digital content.

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.

8.1.8.E.1 Effectively use a variety of search tools and filters in profession.

GENERAL CONSIDERATIONS FOR DIVERSE LEARNERS		
English Language Learners	Students Receiving Special Education Services	Advanced Learners
<ul style="list-style-type: none"> <li>• <a href="#">WIDA Can Do Descriptors for Grades 6-8*</a></li> <li>• <a href="#">WIDA Essential Actions Handbook</a></li> <li>• <a href="#">FABRIC Paradigm</a></li> <li>• <a href="#">Wall Township ESL Grading Protocol</a></li> </ul> <p>*Use WIDA Can Do Descriptors in coordination with <a href="#">Student Language Portraits (SLPs)</a>.</p> <p><b>Potential Accommodations for ELLs</b></p> <ul style="list-style-type: none"> <li>• Personal glossary</li> <li>• Text-to-speech</li> <li>• Extended time</li> <li>• Simplified / verbal instructions</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">New Jersey Tiered System of Supports</a></li> <li>• <a href="#">National Center on Universal Design for Learning - About UDL</a></li> <li>• <a href="#">UDL Checklist</a></li> <li>• <a href="#">UDL Key Terms</a></li> </ul> <p><u>Response to Intervention:</u> Reteach to Build Understanding, Additional Vocabulary Support, Build Mathematical Literacy</p> <p>Students within this class receiving Special Education/Section 504 programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP)/504 Plans due to an identified disability and/or diagnosis. In addition to exposure to the</p>	<ul style="list-style-type: none"> <li>• <a href="#">Knowledge and Skill Standards in Gifted Education for All Teachers</a></li> <li>• <a href="#">Pre-K-Grade 12 Gifted Programming Standards</a></li> <li>• <a href="#">Gifted Programming Glossary of Terms</a></li> </ul> <p><b>Potential Accommodations for Advanced Learners</b></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> </ul>

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<ul style="list-style-type: none"> <li>● Frequent breaks</li> <li>● Small group/One to one</li> <li>● Additional time</li> <li>● Review of directions</li> <li>● Student restates information</li> <li>● Extra visual and verbal cues and prompts</li> <li>● Preferential seating</li> <li>● Verbal and visual cues regarding directions and staying on task</li> <li>● Checklists</li> <li>● Immediate feedback</li> </ul>	<p>general education curriculum, instruction is differentiated based upon the student's needs. The IEP/504 Plan acts as a supplemental curriculum guide inclusive of instructional strategies that support each specific learner.</p> <p><b>Potential Accommodations for Special Education</b></p> <p><b>Presentation accommodations:</b></p> <ul style="list-style-type: none"> <li>● Listen to audio recordings instead of reading text</li> <li>● Pre-teach unknown vocabulary through pictures or videos, and relate to prior knowledge</li> <li>● Work with fewer items per page and/or materials in a larger print size</li> <li>● Use a visual blocker</li> <li>● Use visual presentations of verbal material, such as word webs and visual organizers</li> <li>● Be given a written list of instructions/picture cues</li> </ul> <p><b>Response accommodations:</b></p> <ul style="list-style-type: none"> <li>● Give responses in a form (oral or written) that's easier for him/her</li> <li>● Dictate answers to a scribe</li> <li>● Capture responses on an audio recorder</li> <li>● Use a spelling dictionary or electronic spell-checker</li> <li>● Use a word processor to give responses in class</li> <li>● Use a calculator or table of "math facts"</li> </ul> <p><b>Setting accommodations:</b></p> <ul style="list-style-type: none"> <li>● Work or take a test in a different setting, such as a quiet room with few distractions</li> <li>● Sit where he/she learns best (for example, near the teacher)</li> <li>● Take a test in small group setting</li> </ul> <p><b>Timing accommodations:</b></p> <ul style="list-style-type: none"> <li>● Take more time to complete a task or a test</li> <li>● Have extra time to process oral information and directions</li> </ul>	<ul style="list-style-type: none"> <li>● Homogeneous grouping opportunities</li> </ul> <hr/> <p style="text-align: center;"><b>Students with 504 Plans</b></p> <hr/> <p>Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.</p>
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	<ul style="list-style-type: none"> <li>• Take frequent breaks, such as after completing a task</li> </ul> <p><b>Assignment modifications:</b></p> <ul style="list-style-type: none"> <li>• Complete fewer or different homework problems than peers</li> <li>• Shorten assignment</li> <li>• Answer fewer or different test questions</li> <li>• Create alternate projects or assignments</li> </ul>	
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**At Risk Learners / Differentiation Strategies**

<p>Alternative Assessments Choice Boards Games and Tournaments Group Investigations Guided Reading Learning Contracts Leveled Rubrics Literature Circles Multiple Texts Personal Agendas</p>	<p>Independent Research &amp; Projects Multiple Intelligence Options Project-Based Learning Varied Supplemental Activities Varied Journal Prompts or RAFT Writing Tiered Activities/Assignments Tiered Products Graphic Organizers Choice of Books/Activities Mini-Workshops to Reteach or Extend Think-Pair-Share by readiness or interest Use of Collaboration of Various Activities</p>	<p>Jigsaw Think-Tac-Toe Cubing Activities Exploration by Interest Flexible Grouping Goal-Setting with Students Homework Options Open-Ended Activities Use of Reading Buddies Varied Product Choices Stations/Centers Work Alone/Together</p>
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