

**COURSE OF STUDY UNIT PLANNING GUIDE  
FOR:  
ACADEMIC ENRICHMENT**

**GRADE 8**

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**REVISED JULY 2018  
ALIGNED TO THE NEW JERSEY STUDENT LEARNING STANDARDS**

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**DUMONT PUBLIC SCHOOLS  
DUMONT, NEW JERSEY**

**ACADEMIC ENRICHMENT, GRADE 8  
STEAM In the Real World  
(Small-Group, Pullout Instruction Once Per Week or as Schedule Allows)**

Performance Indicators (Standards and Objectives)	Essential Questions	Activities (Approximate Time Frame)	Strategies/Methods	Resources and Assessment
<p><b>8.1 Educational Technology:</b> 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.</p> <p><b>8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:</b> All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.</p> <p><b>Career Ready Practices:</b> CRP 1: Act as a responsible and contributing citizen and employee CRP 2: Apply appropriate academic and technical skills CRP 3: Attend to personal health and financial well being</p>	<p>How can we apply STEAM (Science, Technology, Engineering, the Arts, and Math) skills to real-world jobs?</p> <p>How do you use the process of elimination to implement a logical and organized approach to problem solving?</p> <p>How do you separate important information from extraneous details?</p> <p>How do you conduct organized research?</p> <p>How do you innovate with existing ideas?</p> <p>Why do engineers and designers strive to improve products used in our daily lives?</p> <p>Why do we use the engineering design process to solve design challenges?</p> <p>How can the engineering design process benefit us in solving problems in our daily</p>	<p><i>(Approximately 2 hour classes, once per week or as schedule allows)</i></p> <p>Students will be able to:</p> <ul style="list-style-type: none"> <li>• Use organized methods to address challenging problems.</li> <li>• Decipher important details from general information.</li> <li>• Conduct research and collect information in an organized way (online, reference books, interviews, visual and auditory sources, etc.); cite sources.</li> <li>• Apply research and brainstorming efforts to innovate products.</li> <li>• Work independently and in groups of various sizes; serve in different roles within groups.</li> <li>• Regularly present to the class in an array of</li> </ul>	<p>Strategies and Methods</p> <ul style="list-style-type: none"> <li>• Teacher introduction of concepts and skills.</li> <li>• Ask students questions to assess understanding and application of concept.</li> <li>• Gradual release of responsibility to have students practice skills with teacher support.</li> <li>• Independent and/or collaborative work to apply skills.</li> <li>• Facilitate an environment in which students feel successful and can take risks.</li> <li>• Differentiate instruction and make modifications as needed. (See Diff/Acc/Mod Section below)</li> <li>• .</li> </ul>	<ul style="list-style-type: none"> <li>• Computers/Applications</li> <li>• Smart Board</li> <li>• Online Tools and Applications</li> <li>• Reference Books</li> <li>• Classroom Tools</li> <li>• Manipulatives</li> <li>• Craft Materials</li> <li>• Handouts</li> <li>• Field Work/Trips when applicable</li> </ul> <p><b>Assessments:</b></p> <ul style="list-style-type: none"> <li>• Classwork assignments</li> <li>• Projects</li> <li>• Class participation</li> <li>• Teacher observation</li> </ul>

<p><b>CRP 4: Communicate clearly and effectively and with reason</b></p> <p><b>CRP 5: Consider the environmental, social and economic impacts of decisions</b></p> <p><b>CRP 6: Demonstrate creativity and innovation</b></p> <p><b>CRP 7: Employ valid and reliable research strategies</b></p> <p><b>CRP 8: Utilize critical thinking to make sense of problems and persevere in solving them</b></p> <p><b>CRP 9: Model integrity, ethical leadership and effective management</b></p> <p><b>CRP 10: Plan education and career paths aligned to personal goals</b></p> <p><b>CRP 11: Use technology to enhance productivity</b></p> <p><b>CRP 12: Work productively in teams while using cultural global competence</b></p> <p><b>9.2 Career Awareness, Exploration and Preparation</b></p> <p><b>Interdisciplinary Standards:</b></p> <p><b>New Jersey Student Learning Standards for English Language Arts/Writing</b></p> <ul style="list-style-type: none"> <li>RI.8.1. Cite the textual evidence and make relevant connections that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.</li> <li>RI.8.2. Determine a central</li> </ul>	<p>lives?</p> <p>How are teamwork and cooperation 21<sup>st</sup> century life skills?</p> <p>How does collaboration allow and/or enable teams to achieve common goals?</p> <p>How are creativity and critical thinking skills essential to the 21<sup>st</sup> century?</p> <p>What challenges does America face in the 21<sup>st</sup> century?</p> <p>How can technology play a role in the engagement of 21st century problems?</p> <p>What are the essential components of a written or performed narrative?</p> <p>What strategies best enable a group to brainstorm and creatively solve problems?</p> <p>How can research lead to decision making?</p> <p>How can interdisciplinary approaches to problem solving lead to strong outcomes?</p>	<p>formats.</p> <p>Sampling of potential activities (additions and/or changes will occur based on student interest):</p> <ul style="list-style-type: none"> <li>World of Free Enterprise</li> <li>Future City Competition</li> <li>C-Span Competition</li> <li>Digital Storytelling</li> <li>Storytelling</li> <li>Animation</li> <li>Passion Project</li> <li>Architecture</li> <li>Mini Golf Design</li> <li>Bridges</li> <li>Clay Animation</li> <li>Law Adventure</li> <li>Child Development</li> <li>Podcasts</li> <li>Ted Talks</li> </ul>		
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<p>idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.</p> <ul style="list-style-type: none"><li>• RI.8.3. Analyze how a text makes connections among and distinctions between individuals, ideas, or events</li><li>• RI.8.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.</li><li>• RI.8.5. Analyze the structure an author uses to organize a specific paragraph in a text, including the role of particular sentences, to develop and to refine a key concept.</li><li>• RI.8.6. Determine an author’s point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.</li><li>• RI.8.7. Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.</li><li>• RI.8.8. Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and</li></ul>				
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<p>sufficient; recognize when irrelevant evidence is introduced.</p> <ul style="list-style-type: none"><li>• RI.8.9. Analyze and reflect on (e.g. practical knowledge, historical/cultural context, and background knowledge) two or more texts that provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.</li><li>• W.8.1. Write arguments to support claims with clear reasons and relevant evidence.</li><li>• W.8.2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</li><li>• W.8.3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.</li><li>• W.8.4. Produce clear and coherent writing in which the development, organization, voice and style are appropriate to task, purpose, and audience.</li><li>• W.8.5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well</li></ul>				
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purpose and audience have been addressed.

- W.8.6. Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.
- W.8.7. Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.
- W.8.8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
- W.8.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

**New Jersey Student Learning Standards for Mathematics**

- 8.G.A. Understand congruence and similarity using physical models, transparencies, or geometry software.
- 8.G.C. Solve real-world and mathematical problems involving volume of cylinders, cones, and

spheres.

**New Jersey Student Learning Standards for Social Studies**

- **6.1 U.S. History: America in the World:** All students will acquire the knowledge and skills to think analytically about how past and present interactions of people, cultures, and the environment shape the American heritage. Such knowledge and skills enable students to make informed decisions that reflect fundamental rights and core democratic values as productive citizens in local, national, and global communities.
- **6.2 World History/Global Studies:** All students will acquire the knowledge and skills to think analytically and systematically about how past interactions of people, cultures, and the environment affect issues across time and cultures. Such knowledge and skills enable students to make informed decisions as socially and ethically responsible world citizens in the 21st century.
- **6.3 Active Citizenship in the 21st Century:** All students will acquire the skills needed to be active, informed citizens who value diversity and promote cultural understanding by working collaboratively to address the challenges that are inherent in living in an interconnected world.

**New Jersey Student Learning Standards for Science**

- **MS-ETS1-1:** Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
- **MS-ETS1-2:** Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- **MS-ETS1-3:** Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
- **MS-ETS1-4:** Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

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**Differentiation/Accommodations/Modifications**

<b>Gifted and Talented</b>	<b>English Language Learners</b>	<b>Students with Disabilities/504</b>	<b>Students at Risk of School Failure</b>
<p><b>Extension Activities</b></p> <p>Conduct research and provide presentation of cultural topics.</p> <p>Design surveys to generate and analyze data to be used in discussion.</p> <p>Debate topics of interest / cultural importance.</p> <p>Exploration of art and/or artists to understand society and history.</p> <p>Implement RAFT Activities as they pertain to the types / modes of communication (role, audience, format, topic).</p> <p>Use of Higher Level Questioning Techniques.</p>	<p><b>Modifications for Assignments</b></p> <p>Pair visual prompts with verbal presentations</p> <p>Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary)</p> <p>Extended time for assignment completion as needed</p> <p>Highlight key vocabulary</p> <p>Use graphic organizers</p>	<p><b>Modifications for Assignments</b></p> <p>Pair visual prompts with verbal presentations</p> <p>Ask students to restate information, directions, and assignments</p> <p>Repetition and practice</p> <p>Model skills / techniques to be mastered</p> <p>Extended time to complete classwork</p> <p>Provide copy of class notes</p> <p>Preferential seating to be mutually determined by the student and teacher</p> <p>Student may request to use a computer to complete assignments</p> <p>Establish expectations for correct spelling on assignments</p> <p>Assign a peer helper in the class setting</p> <p>Provide oral reminders and check student work during independent work time</p> <p>Assist student with long and short term planning of assignments</p> <p>Encourage student to proofread assignments and tests</p> <p>Provide regular parent / school communication</p>	<p><b>Modifications for Assignments</b></p> <p>Pair visual prompts with verbal presentations</p> <p>Ask students to restate information, directions, and assignments</p> <p>Repetition and practice</p> <p>Model skills / techniques to be mastered</p> <p>Extended time to complete classwork</p> <p>Provide copy of class notes</p> <p>Preferential seating to be mutually determined by the student and teacher</p> <p>Student may request to use a computer to complete assignments</p> <p>Establish expectations for correct spelling on assignments.</p> <p>Assign a peer helper in the class setting</p> <p>Provide oral reminders and check student work during independent work time</p> <p>Assist student with long and short term planning of assignments</p> <p>Encourage student to proofread assignments and tests</p>

		<p>Student requires use of other assistive technology device</p> <p>Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases</p> <p>Provide the student with clearly stated (written) expectations and grading criteria for assignments. Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic)</p> <p><b>Modifications for Assessments</b> Extended time on classroom tests and quizzes</p> <p>Student may take/complete tests in an alternate setting as needed</p> <p>Restate, reread, and clarify directions/questions</p> <p>Distribute study guide for classroom tests</p> <p>Establish procedures for accommodations / modifications for assessments</p>	<p>Provide regular parent / school communication</p> <p>Student requires use of other assistive technology device</p> <p>Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases</p> <p>Provide the student with clearly stated (written) expectations and grading criteria for assignments. Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, topic)</p> <p><b>Modifications for Assessments</b> Extended time on classroom tests and quizzes</p> <p>Student may take/complete tests in an alternate setting as needed</p> <p>Restate, reread, and clarify directions/questions</p> <p>Distribute study guide for classroom tests</p> <p>Establish procedures for accommodations / modifications for assessments</p>
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