Prospect Park School District
Prospect Park, New Jersey
Gifted and Talented Education Curriculum Guide
2018-2019

Approved by the Prospect Park Board of Education
October 2014

Gifted & Talented Program

Purpose

The purpose of the Academically Talented Program is to provide a learning atmosphere which will enable the academically talented child to develop his/her potential and exceptional abilities particularly in the areas of higher order thinking skills, decision-making, planning, performing, reasoning, creating and communicating. The use of technology is integrated throughout the program. In addition, it will help the student learn of his/her talents which he/she can continue to pursue in and out of school.

Content Area: Gifted and Talented	Grade Level: K - 2
The Students will be able to:	
• Interact in large and small group discussions and activities. • Interact in an appropriate manner in small group activities. Work independently with minimal supervision. • Brainstorm with gifted children on what types of projects they would like to explore to extend what they're learning in the classroom. • Engage in STEAM (science, technology, engineering, arts, and math) projects that are challenging, and culturally fair. • Ask and respond to questions, using higher-order thinking skills. • Engage in interdisciplinary activities that incorporate a variety of technologies. • Demonstrate convergent thinking skills through class discussion and group activities. • Demonstrate visual/spatial thinking skills through activities and alternative assessments	**Suggested Units of Study:** 1. Publishing a writing 2. Codesters- computer coding 3. Tangrams 4. Geometry City 5. Independent Research Project – exciting research project that allows the students to learn about something they are interested in. 6. Application of Engineering Design (STEAM) with writing labs • Towers (varying materials and controls) • Lego challenges • Fairytale building challenges • Catapult engineer challenge • Superhero Coding

Standards:

TECH.8.1.2.A.CS1 - Understand and use technology systems**TECH.8.1.2.A.2** - Create a document using a word processing application**TECH.8.1.2.C.CS1** - Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media.**TECH.8.1.2.E.CS3** - [*Content Statement*] - Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.**TECH.8.1.2.F.CS3** -- Collect and analyze data to identify solutions and/or make informed decisions**TECH.8.2.2.A.5** -- Collaborate to design a solution to a problem affecting the community.**TECH.8.2.2.C.1** - [*Cumulative Progress Indicator*] - Brainstorm ideas on how to solve a problem or build a product.**TECH.8.2.2.C.2** - [*Cumulative Progress Indicator*] - Create a drawing of a product or device that communicates its function to peers and discuss.**TECH.8.2.2.C.3** -- Explain why we need to make new products.**TECH.8.2.2.C.CS2** -- The application of engineering design.**TECH.8.2.2.C.4** - Identify designed products and brainstorm how to improve one used in the classroom.**TECH.8.2.2.D.1** - Collaborate and apply a design process to solve a simple problem from everyday experiences. **TECH.8.2.2.E.3** - Create algorithms (a sets of instructions) using a pre-defined set of commands (e.g., to move a student or a character through a maze).**SCI.K-2.K-2-ETS1-1.ETS1.A.1** -- A situation that people want to change or create can be approached as a problem to be solved through engineering.**SCI.K-2.K-2-ETS1-2.ETS1.B.1** -- Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. **SCI.K-2.K-2-ETS1-3** - Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.**SCI.K-2.K-2-ETS1-3.4.1** - [*Practice*] - Analyze data from tests of an object or tool to determine if it works as intended.**SCI.K-2.K-2-ETS1-3.ETS1.C** - Optimizing the Design Solution **CRP.K-12.CRP2.1** - Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.**CRP.K-12.CRP6.1** - Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization. **CRP.K-12.CRP12.1** - Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings. **LA.1.SL.1.1** - Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups. **LA.1.SL.1.1.C** - Ask questions to clear up any confusion about the topics and texts under discussion. **LA.1.W.1.6** -- With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. **LA.2.RI.5.6** - Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently. **LA.2.SL.2.5** - Use multimedia; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. **SOC.6.1.4.B.CS1** - Spatial thinking and geographic tools can be used to describe and analyze the spatial patterns and organization of people, places, and environments on Earth.**SOC.6.1.4.C.6** - Describe the role and relationship among households, businesses, laborers, and governments within the economic system. **SOC.6.1.4.C.9** - Compare and contrast how the availability of resources affects people across the world differently. **SOC.6.1.4.C.CS6** - Creativity and innovation affect lifestyle, access to information, and the creation of new products and services. **SOC.6.1.4.C.CS7** - Economic opportunities in New Jersey and other states are related to the availability of resources and technology. **SOC.6.1.4.C.CS8** - Creativity and innovation have led to improvements in lifestyle, access to information, and the creation of new products. **SOC.6.1.4.C.17** - Determine the role of science and technology in the transition from an agricultural society to an industrial society, and then to the information age. **SOC.6.3.4.C.1** - Develop and implement a group initiative that addresses an economic issue impacting children. **Mathematical Practices** 1 – 8.**NAGC** 1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.8.

Resources/Tech Integration: Storybird, Chromebooks, Computers, Codesters, KAHOOTIT!, Manipulatives (including Legos, tangrams, shapes, shape nets, Teachers pay teachers – STEAM resources

Modifications Extensions Activities
• Conduct Research and provide presentation of cultural topics. • Design surveys to generate and analyze data to be used in discussion. • Debate topics of interest/ cultural importance. • Authentic listening and reading sources that provide data and support for speaking and writing prompts. • Anchor activities. • Use of Higher Level Questioning Techniques. • Provide assessments at a higher level of thinking. • Provide alternatives for students who complete their work early. • Allow students to make choices in their learning.

**Please see Appendix A for modifications and accommodations for Gifted and Talented, ELL Learners, students with disabilities and students at risk for failure.

Content Area: Gifted and Talented	Grade Level: 3 - 4
The Students will be able to:	
• Interact in large and small group discussions and activities. • Interact in an appropriate manner in small group activities. • Work independently with minimal supervision. • Brainstorm ideas collaboratively in group activities. • Identify a problem and state alternatives with minimal assistance. • Elaborate on a topic or response. • Engage in project-based unit activities which are interdisciplinary (language arts/social studies/math/science/visual arts), culturally fair, and challenging. (VARIOUS) • Employ a variety of technologies in research and enhancement activities with limited supervision. Brainstorm with gifted children on what types of projects they would like to explore to extend what they're learning in the classroom.	**Suggested Units of Study:** 1. Codesters – computer coding 2. Application of Engineering Design (STEAM) with writing labs • Aluminum Foil Boat • Bridge Engineering varying materials and controls • Paper Chair • Peppermint Racers 3. Makerspace Task Cards 4. Independent Research Project – exciting research project that allows the students to learn about something they are interested in. 5. Battle of the Books 6. Careers Trivia Competitions

Standards:

TECH.8.1.5.A.CS1 - Understand and use technology systems **TECH.8.1.5.A.1** - Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems **TECH.8.1.5.B.CS1** Apply existing knowledge to generate new ideas, products, or processes. **TECH.8.1.5.B.CS2** - Create original works as a means of personal or group expression. **TECH.8.1.5.C.CS1** - Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media **TECH.8.1.5.C.CS3** - Develop cultural understanding and global awareness by engaging with learners of other cultures. **TECH.8.1.5.E.CS1** - Plan strategies to guide inquiry. **TECH.8.1.5.E.CS2** - Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. **TECH.8.1.5.E.CS2** - Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. **TECH.8.1.5.F.CS2** - Plan and manage activities to develop a solution or complete a project. **TECH.8.1.5.F.CS3** - Collect and analyze data to identify solutions and/or make informed decisions. **TECH.8.2.5.C.3** - Research how design modifications have lead to new products. **TECH.8.2.5.C.CS2** - The application of engineering design**. TECH.8.2.5.C.4** - Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models. **TECH.8.2.5.C.7** - Work with peers to redesign an existing product for a different purpose. **TECH.8.2.5.C.6** - Examine a malfunctioning tool and identify the process to troubleshoot and present options to repair the tool. **TECH.8.2.5.C.CS3** - The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving. **TECH.8.2.5.E.1** - Identify how computer programming impacts our everyday lives. **TECH.8.2.5.E.CS1** -Computational thinking and computer programming as tools used in design and engineering. **TECH.8.2.5.E.3** - Using a simple, visual programming language, create a program using loops, events and procedures to generate specific output. **TECH.8.2.5.E.4** - Use appropriate terms in conversation (e.g., algorithm, program, debug, loop, events, procedures, memory, storage, processing, software, coding, procedure, and data). **SOC.6.1.4.A.CS7** - [Content Statement] - The United States democratic system requires active participation of its citizens. **SOC.6.1.4.A.11** - Explain how the fundamental rights of the individual and the common good of the country depend upon all citizens exercising their civic responsibilities at the community, state, national, and global levels **SOC.6.1.4.A.CS10** - In an interconnected world, it important to consider different cultural perspectives before proposing solutions **SOC.6.1.4.A.15** - Explain how and why it is important that people from diverse cultures collaborate to find solutions to community, state, national, and global challenges. **SOC.6.1.4.A.CS11** - In an interconnected world, increased collaboration is needed by individuals, groups, and nations to solve global problems. **SOC.6.1.4.C.CS1** - People make decisions based on their needs, wants, and the availability of resources. **SOC.6.1.4.C.4** - Describe how supply and demand influence price and output of products. **SOC.6.1.4.C.CS7** - Economic opportunities in New Jersey and other states are related to the availability of resources and technology. **SOC.6.1.4.C.18** - Explain how the development of communications systems has led to increased collaboration and the spread of ideas throughout the United States and the world. **SCI.3-5-ETS1-3** - Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. **SCI.3-5-ETS1-2** - Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. **SCI.3-5-ETS1-1** - Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. **LA.4.RI.4.6** - Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided**. LA.4.RI.4.7** - Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears**. LA.4.W.4.1** - [Progress Indicator] - Write opinion pieces on topics or texts, supporting a point of view with reasons and information. **LA.4.W.4.1.B** - Provide reasons that are supported by facts from texts and/or other sources. **LA.4.W.4.1.D** - Provide a conclusion related to the opinion presented. **LA.4.W.4.2** - Write informative/explanatory texts to examine a topic and convey ideas and information clearly. **CRP.K-12.CRP2.1** - Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation. **CRP.K-12.CRP6.1** - Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization. **CRP.K-12.CRP12.1** - Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings. **Mathematical Practices** 1 – 8. **NAGC** 1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.8.

Resources/Tech Integration: Battle of the Books novels, Chromebooks, Computers, Codesters, KAHOOTIT!, Manipulatives for STEAM activities, Teachers pay teachers – STEAM resources,

Modifications Extensions Activities
• Extension Activities. • Conduct Research and provide presentation of cultural topics. • Design surveys to generate and analyze data to be used in discussion. • Debate topics of interest/ cultural importance. • Authentic listening and reading sources that provide data and support for speaking and writing prompts. • Anchor activities. • Use of Higher Level Questioning Techniques. • Provide assessments at a higher level of thinking. • Provide alternatives for students who complete their work early. • Allow students to make choices in their learning.

**Please see Appendix A for modifications and accommodations for Gifted and Talented, ELL Learners, students with disabilities and students at risk for failure.

Content Area: Gifted and Talented	**Grade Level:** Grade Level: 5 - 6
The Students will be able to:	
• Interact in large and small group cooperative activities. Respond to open-ended questions applying critical thinking skills using a rubric designed by his/her peer group. • Engage in project-based unit activities which are interdisciplinary (language arts/social studies/math/science/visual arts), culturally fair, and challenging. (Various) • Determine cause/effect relationships on a given topic. • Categorize and classify information using a variety of technologies. • Compare/contrast information obtained in discussion and research on a given topic. • Separate fact from opinion. • Develop a hypothesis based upon a problem or conjecture. • Originate a new plan or solution or solution to a problem • Make judgments employing elimination skills. • Present a critique of a book, issue etc., in an appropriate manner. • Respond to open-ended questions. Practice the scientific method to reach a determination.	**Suggested Units of Study:** 1. Codesters – computer coding 2. CSI 3. Battle of the Books 4. Quiz Bowl competitions and Kahootit! competitions 5. Arts Symposium 6. Stock market 7. SCRATCH Meet Up 8. Technology Day 9. Current Events Knowledge Masters 10. Solar Panel Cars 11. Maker Space Task Cards 12. Independent Research Project – exciting research project that allows students to learn about something they are interested in. 13. Application of Engineering Design (STEAM) with writing labs • Build a carnival ride • Marble Run Challenge

Standards:

TECH.8.1.8.A.CS2 - Use and/or develop a simulation that provides an environment to solve a real world problem or theory. Demonstrate knowledge of a real world problem using digital tools. Use and/or develop a simulation that provides an environment to solve a real world problem or theory. **TECH.8.1.8.B.CS1** - Apply existing knowledge to generate new ideas, products, or processes. **TECH.8.1.8.B.CS2** - Create original works as a means of personal or group expression. **TECH.8.1.8.C.CS1** - Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. **TECH.8.1.8.C.CS4** - Contribute to project teams to produce original works or solve problems. **TECH.8.1.8.E.CS1** - Plan strategies to guide inquiry. **TECH.8.1.8.E.CS2** - Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. **TECH.8.1.8.F.CS1** - Identify and define authentic problems and significant questions for investigation. **TECH.8.1.8.F.CS2** - Plan and manage activities to develop a solution or complete a project. **TECH.8.1.8.F.CS3** - Collect and analyze data to identify solutions and/or make informed decisions. **TECH.8.1.8.F.1** -Explore a local issue, by using digital tools to collect and analyze data to identify a solution and make an informed decision. **TECH.8.2.8.A.CS3** - The relationships among technologies and the connections between technology and other fields of study. **TECH.8.2.8.C.2** - Explain the need for optimization in a design process. **TECH.8.2.8.C.3** - Evaluate the function, value, and aesthetics of a technological product or system, from the perspective of the user and the producer. **TECH.8.2.8.C.CS2** - The application of engineering design. **TECH.8.2.8.C.4** - Identify the steps in the design process that would be used to solve a designated problem. **TECH.8.2.8.C.CS3** - The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving. **TECH.8.2.8.C.6** - Collaborate to examine a malfunctioning system and identify the step-by-step process used to troubleshoot, evaluate and test options to repair the product, presenting the better solution. **TECH.8.2.8.C.8** - Develop a proposal for a chosen solution that include models (physical, graphical or mathematical) to communicate the solution to peers. **TECH.8.2.8.D.3** - Build a prototype that meets a STEM- based design challenge using science, engineering, and math principles that validate a solution. **TECH.8.2.8.D.2** - Identify the design constraints and trade-offs involved in designing a prototype (e.g., how the prototype might fail and how it might be improved) by completing a design problem and reporting results in a multimedia presentation, design portfolio or engineering notebook. **TECH.8.2.8.D.1** - Design and create a product that addresses a real world problem using a design process under specific constraints. **TECH.8.2.8.E.CS1** -Computational thinking and computer programming as tools used in design and engineering. **TECH.8.2.8.E.3** -Develop an algorithm to solve an assigned problem using a specified set of commands and use peer review to critique the solution. **TECH.8.2.8.E.4** - Use appropriate terms in conversation (e.g., programming, language, data, RAM, R OM, Boolean logic terms). **SOC.6.1.8** - 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. **SOC.6.1.8.A.3.g** - Evaluate the impact of the Constitution and Bill of Rights on current day issues. **SOC.6.1.8.D.3.b** - Explain why the Declaration of Independence was written and how its key principles evolved to become unifying ideas of American democracy. **SOC.6.1.8.C.4.a** - Analyze the debates involving the National Bank, uniform currency, and tariffs, and determine the extent to which each of these economic tools met the economic challenges facing the new nation. **SOC.6.1.8.C.4.b** - Explain how major technological developments revolutionized land and water transportation, as well as the economy, in New Jersey and the nation. **SOC.6.1.8.C.4.c** - Analyze how technological innovations affected the status and social class of different groups of people, and explain the outcomes that resulted. **SCI.3-5-ETS1-3** - Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. **SCI.3-5-ETS1-2** - Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem **SCI.3-5-ETS1-1** - Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost**. LA.8.W.8.1** - Write arguments to support claims with clear reasons and relevant evidence. **LA.8.W.8.1.A** - Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically **LA.8.W.8.1.B** - Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. **LA.8.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. **LA.8.W.8.2.A** - Introduce a topic and organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia). **LA.8.W.8.6** - Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others. **LA.8.W.8.7** - Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration**.** **LA.8.SL.8.1.A** - Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion**. LA.8.SL.8.1.C** - Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas. **LA.8.SL.8.2** - Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation. **LA.8.SL.8.5** - Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. **CRP.K-12.CRP2.1** - Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation. **CRP.K-12.CRP6.1** - Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take

action on their ideas and understand how to bring innovation to an organization. **CRP.K-12.CRP12.1** - Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings. **Mathematical Practices** 1 – 8. **NAGC** 1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.8.

Resources/Tech Integration: Battle of the Books novels, Chromebooks, Computers, Codesters, KAHOOTIT!, Manipulatives for STEAM activities, Teachers pay teachers – STEAM resources, Makerspace Cards, G&T Passaic County Consortium Activities, Lab Forms, Google Classroom, Doc, Slides, stockmarketgame.org, Solar Panel Car Competition

Modifications Extensions Activities

- Extension Activities.
- Conduct Research and provide presentation of cultural topics.
- Design surveys to generate and analyze data to be used in discussion.
- Debate topics of interest/ cultural importance.
- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
- Anchor activities.
- Use of Higher Level Questioning Techniques.
- Provide assessments at a higher level of thinking.
- Provide alternatives for students who complete their work early.

**Please see Appendix A for modifications and accommodations for Gifted and Talented, ELL Learners, students with disabilities and students at risk for failure.

Content Area: Gifted and Talented	Grade Level: 7 - 8
The Students will be able to:	
• Interact in large and small group settings. Respond to open-ended questions applying critical thinking skills using a rubric designed by his/her peer group. • Engage in project-based unit activities which are interdisciplinary (language arts/social studies/math science/visual arts), culturally fair, and challenging. • Compare/contrast information obtained in discussion and research on a given topic. • Hypothesize given a situation, topic or problem and state alternatives. • Originate a new plan or solution or solution to a problem • Make judgments employing elimination skills. • Engage in group activities demonstrating appropriate critiquing skills. • Use critical thinking and problem solving skills to state alternatives to a question or problem. • Use mathematical processes to solve problems. • Employ a variety of technologies in research and enhancement activities with limited supervision. • Brainstorm using listening, speaking, writing, and reading skills; take notes, develop outlines based upon brainstorming activities. Brainstorm with gifted children on what types of projects they would like to explore to extend what they're learning in the classroom.	**Suggested Units of Study:** 1. Codesters – computer coding 2. Stock Market 3. Amazing Race Unit - Geography Challenge 4. Battle of the Books 5. Quiz Bowl and KAHOOTIT! competitions 6. Debates 7. Algebra 8. Solar Panel Cars 9. Maker Space Task Cards 10. Independent Research Project – exciting research project that allows the students to learn about something they are interested in. 11. Application of Engineering Design (STEAM) with writing labs. • Roller Coaster Engineering Challenge • Create a Robot Challenge

Standards:

TECH.8.1.8.A.CS2 - Use and/or develop a simulation that provides an environment to solve a real world problem or theory. Demonstrate knowledge of a real world problem using digital tools. Use and/or develop a simulation that provides an environment to solve a real world problem or theory. **TECH.8.1.8.B.CS1** - Apply existing knowledge to generate new ideas, products, or processes. **TECH.8.1.8.B.CS2** - Create original works as a means of personal or group expression. **TECH.8.1.8.C.CS1** - Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. **TECH.8.1.8.C.CS4** - Contribute to project teams to produce original works or solve problems. **TECH.8.1.8.E.CS1** - Plan strategies to guide inquiry. **TECH.8.1.8.E.CS2** - Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. **TECH.8.1.8.F.CS1** - Identify and define authentic problems and significant questions for investigation. **TECH.8.1.8.F.CS2** - Plan and manage activities to develop a solution or complete a project. **TECH.8.1.8.F.CS3** - Collect and analyze data to identify solutions and/or make informed decisions. **TECH.8.1.8.F.1** -Explore a local issue, by using digital tools to collect and analyze data to identify a solution and make an informed decision. **TECH.8.2.8.A.CS3** - The relationships among technologies and the connections between technology and other fields of study. **TECH.8.2.8.C.2** - Explain the need for optimization in a design process. **TECH.8.2.8.C.3** - Evaluate the function, value, and aesthetics of a technological product or system, from the perspective of the user and the producer. **TECH.8.2.8.C.CS2** - The application of engineering design. **TECH.8.2.8.C.4** - Identify the steps in the design process that would be used to solve a designated problem. **TECH.8.2.8.C.CS3** - The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving. **TECH.8.2.8.C.6** - Collaborate to examine a malfunctioning system and identify the step-by-step process used to troubleshoot, evaluate and test options to repair the product, presenting the better solution. **TECH.8.2.8.C.8** - Develop a proposal for a chosen solution that include models (physical, graphical or mathematical) to communicate the solution to peers. **TECH.8.2.8.D.3** - Build a prototype that meets a STEM- based design challenge using science, engineering, and math principles that validate a solution. **TECH.8.2.8.D.2** - Identify the design constraints and trade-offs involved in designing a prototype (e.g., how the prototype might fail and how it might be improved) by completing a design problem and reporting results in a multimedia presentation, design portfolio or engineering notebook. **TECH.8.2.8.D.1** - Design and create a product that addresses a real world problem using a design process under specific constraints. **TECH.8.2.8.E.CS1** -Computational thinking and computer programming as tools used in design and engineering. **TECH.8.2.8.E.3** -Develop an algorithm to solve an assigned problem using a specified set of commands and use peer review to critique the solution. **TECH.8.2.8.E.4** - Use appropriate terms in conversation (e.g., programming, language, data, RAM, R OM, Boolean logic terms). **SOC.6.1.8** - 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. **SOC.6.1.8.A.3.g** - Evaluate the impact of the Constitution and Bill of Rights on current day issues. **SOC.6.1.8.D.3.b** - Explain why the Declaration of Independence was written and how its key principles evolved to become unifying ideas of American democracy. **SOC.6.1.8.C.4.a** - Analyze the debates involving the National Bank, uniform currency, and tariffs, and determine the extent to which each of these economic tools met the economic challenges facing the new nation. **SOC.6.1.8.C.4.b** - Explain how major technological developments revolutionized land and water transportation, as well as the economy, in New Jersey and the nation. **SOC.6.1.8.C.4.c** - Analyze how technological innovations affected the status and social class of different groups of people, and explain the outcomes that resulted. **SCI.3-5-ETS1-3** - Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. **SCI.3-5-ETS1-2** - Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem **SCI.3-5-ETS1-1** - Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost**. LA.8.W.8.1** - Write arguments to support claims with clear reasons and relevant evidence. **LA.8.W.8.1.A** - Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically **LA.8.W.8.1.B** - Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. **LA.8.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. **LA.8.W.8.2.A** - Introduce a topic and organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia). **LA.8.W.8.6** - Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others. **LA.8.W.8.7** - Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration**.** **LA.8.SL.8.1.A** - Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion**. LA.8.SL.8.1.C** - Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas. **LA.8.SL.8.2** - Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation. **LA.8.SL.8.5** - Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. **CRP.K-12.CRP2.1** - Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation. **CRP.K-12.CRP6.1** - Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take

action on their ideas and understand how to bring innovation to an organization. **CRP.K-12.CRP12.1** - Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings. **Mathematical Practices** 1 – 8. **NAGC** 1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.8.

Resources/Tech Integration: : Battle of the Books novels, Chromebooks, Computers, Codesters, KAHOOTIT!, Manipulatives for STEAM activities, Teachers pay teachers – STEAM resources, Makerspace Cards, G&T Passaic County Consortium Activities, Lab Forms, Google Classroom, Doc, Slides, stockmarketgame.org, Solar Panel Car Competition, Algebra I textbook, Maps and teacher resource textbook on Amazing Race.

Modifications Extensions Activities

- Extension Activities.
- Conduct Research and provide presentation of cultural topics.
- Design surveys to generate and analyze data to be used in discussion.
- Debate topics of interest/ cultural importance.
- Authentic listening and reading sources that provide data and support for speaking and writing prompts.
- Anchor activities.
- Use of Higher Level Questioning Techniques.
- Provide assessments at a higher level of thinking.
- Provide alternatives for students who complete their work early.
- Allow students to make choices in their learning.

**Please see Appendix A for modifications and accommodations for Gifted and Talented, ELL Learners, students with disabilities and students at risk for failure.

CRITERIA FOR ENTRANCE INTO G&T PROGRAM

Grade K

Final Pre – K Rating (if Available)
Teacher Recommendation
Benchmark Testing
DRA

Grades 1-3

MAP – Score of 80
NJ Pass – Advanced Proficient in Language Arts Literacy and Math
Final Grades – A's and B's
Teacher Recommendation
DRA
Teacher Rating Scale

Grades 4-8

Final Grades – A's and B's
Teacher Recommendations
DRA
Teacher Rating Scale
PARCC

Appendix A

Differentiation/Accommodations/Modifications			
Gifted and Talented	**English Language Learners**	**Students with Disabilities**	**Students at Risk of School Failure**
(content, process, product and learning environment) **Extension Activities** Conduct research and provide presentation of cultural topics. Design surveys to generate and analyze data to be used in discussion. Use of Higher Level Questioning Techniques Provide assessments at a higher level of thinking Create alternative assessment which requires writing, research and presentation	**Modifications for Classroom** Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary) Preteach vocabulary Use graphic organizers or other visual models Use of manipulatives to visualize concept Highlight key vocabulary-chart or vocabulary bank Use of nonverbal responses (thumbs up/down) Use sentence frames Design questions for different proficiency levels Utilize partners and partner talk	***(appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team)*** **Modifications for Classroom** Pair visual prompts with verbal presentations Use of lab or experiments to give visual representation of concept Ask students to restate information, directions, and assignments. Preteach vocabulary Repetition and practice Model skills / techniques to be mastered. Use manipulatives and visual representation to examine	**Modifications for Classroom** Pair visual prompts with verbal presentations Use of lab or experiments to give visual representation of concept Ask students to restate information, directions, and assignments. Work within group or partners Repetition and practice Model skills / techniques to be mastered. Use metacognitive work Extended time to complete class work Provide copy of class notes Preferential seating to be

	Breakdown large assignments into smaller tasks **Modifications for Homework/Assignments** Modified Assignments Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary) Extended time for assignment completion as needed Modify linguistic complexity Use of dictionary as needed Use of multimedia presentation Use of lab or experiments to give visual representation of concept	concepts Breakdown large assignments into smaller tasks Extended time to complete class work Provide copy of class notes Preferential seating to be mutually determined by the student and teacher Use of online component of book Extra textbooks for home. Student may request books on tape / CD / digital media, as available and appropriate. Assign a peer helper in the class setting Provide oral reminders and check student work during independent work time Assist student with long and short term planning of assignments	mutually determined by the student and teacher Student may request to use a computer to complete assignments. Use manipulatives to examine concepts Extra textbooks for home. Student may request books on tape / CD / digital media, as available and appropriate. Assign a peer helper in the class setting Provide oral reminders and check student work during independent work time Assist student with long and short term planning of assignments Encourage student to review assignments and tests Provide regular parent/ school communication

		Encourage student to proofread assignments and tests Provide regular parent/ school communication Teachers check/sign student agenda daily Student requires use of other assistive technology device Use of multimedia presentation Use of mnemonic tricks to improve memory **Modifications for Homework and Assignments** Extended time to complete assignments. Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases. Provide the student with clearly stated (written) expectations and grading criteria for	Teachers check/sign student agenda daily Student requires use of other assistive technology device Use of multimedia presentation **Modifications for Homework and Assignments** Extended time to complete assignments. Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases. **Modifications for Assessments** Extended time on classroom tests and quizzes. Student may take/complete tests in an alternate setting as needed. Restate, reread, and clarify directions/questions

		assignments. **Modifications for Assessments** Extended time on classroom tests and quizzes. Student may take/complete tests in an alternate setting as needed. Restate, reread, and clarify directions/questions Distribute study guide for classroom tests. Establish procedures for accommodations / modifications for assessments. Alternative assessment	Distribute study guide for classroom tests. Establish procedures for accommodations / modifications for assessments.