Main Criteria: Forward Education
Secondary Criteria: New York State Learning Standards and Core Curriculum
Subjects: Mathematics, Science, Technology Education
Grades: 11, 12, Key Stage 4

Forward Education

Autonomous Electric Vehicles of the Future

New York State Learning Standards and Core Curriculum
Mathematics
Grade **11** - Adopted: **2017/Updated 2019**

STRAND / DOMAIN / UNIFYING THEME		Mathematical Practices
CATEGORY / CLUSTER / KEY IDEA	MP.1	Make sense of problems and persevere in solving them.
CATEGORY / CLUSTER / KEY IDEA	MP.2	Reason abstractly and quantitatively.
CATEGORY / CLUSTER / KEY IDEA	MP.3	Construct viable arguments and critique the reasoning of others.
CATEGORY / CLUSTER / KEY IDEA	MP.4	Model with mathematics.
CATEGORY / CLUSTER / KEY IDEA	MP.8	Look for and express regularity in repeated reasoning.

STRAND / DOMAIN / UNIFYING THEME		Algebra I
CATEGORY / CLUSTER / KEY IDEA	**AI-A.REI.**	**Algebra - Reasoning with Equations and Inequalities**
STANDARD / CONCEPTUAL UNDERSTANDING		**Understand solving equations as a process of reasoning and explain the reasoning.**
EXPECTATION / CONTENT SPECIFICATION	AI-A.REI.1a.	Explain each step when solving a linear or quadratic equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

STRAND / DOMAIN / UNIFYING THEME		Algebra I
CATEGORY / CLUSTER / KEY IDEA	**AI-F.IF.**	**Functions - Interpreting Functions**

STANDARD / CONCEPTUAL UNDERSTANDING		**Analyze functions using different representations.**
EXPECTATION / CONTENT SPECIFICATION	**AI-F.IF.7.**	**Graph functions and show key features of the graph by hand and by using technology where appropriate. (Shared standard with Algebra II)**
GRADE EXPECTATION	AI-F.IF.7.a.	Graph linear, quadratic, and exponential functions and show key features.
STRAND / DOMAIN / UNIFYING THEME		**Algebra II**
CATEGORY / CLUSTER / KEY IDEA	**AII-A.REI.**	**Algebra - Reasoning with Equations and Inequalities**
STANDARD / CONCEPTUAL UNDERSTANDING		**Understand solving equations as a process of reasoning and explain the reasoning.**
EXPECTATION / CONTENT SPECIFICATION	AII-A.REI.1b.	Explain each step when solving rational or radical equations as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

New York State Learning Standards and Core Curriculum

Mathematics

Grade **12** - Adopted: **2017/Updated 2019**

STRAND / DOMAIN / UNIFYING THEME		**Mathematical Practices**
CATEGORY / CLUSTER / KEY IDEA	MP.1	Make sense of problems and persevere in solving them.
CATEGORY / CLUSTER / KEY IDEA	MP.2	Reason abstractly and quantitatively.
CATEGORY / CLUSTER / KEY IDEA	MP.3	Construct viable arguments and critique the reasoning of others.
CATEGORY / CLUSTER / KEY IDEA	MP.4	Model with mathematics.
CATEGORY / CLUSTER / KEY IDEA	MP.8	Look for and express regularity in repeated reasoning.
STRAND / DOMAIN / UNIFYING THEME		**Algebra I**

CATEGORY / CLUSTER / KEY IDEA	**AI-A.REI.**	**Algebra - Reasoning with Equations and Inequalities**
STANDARD / CONCEPTUAL UNDERSTANDING		**Understand solving equations as a process of reasoning and explain the reasoning.**
EXPECTATION / CONTENT SPECIFICATION	AI-A.REI.1a.	Explain each step when solving a linear or quadratic equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

STRAND / DOMAIN / UNIFYING THEME		**Algebra I**
CATEGORY / CLUSTER / KEY IDEA	**AI-F.IF.**	**Functions - Interpreting Functions**
STANDARD / CONCEPTUAL UNDERSTANDING		**Analyze functions using different representations.**
EXPECTATION / CONTENT SPECIFICATION	**AI-F.IF.7.**	**Graph functions and show key features of the graph by hand and by using technology where appropriate. (Shared standard with Algebra II)**
GRADE EXPECTATION	AI-F.IF.7.a.	Graph linear, quadratic, and exponential functions and show key features.

STRAND / DOMAIN / UNIFYING THEME		**Algebra II**
CATEGORY / CLUSTER / KEY IDEA	**AII-A.REI.**	**Algebra - Reasoning with Equations and Inequalities**
STANDARD / CONCEPTUAL UNDERSTANDING		**Understand solving equations as a process of reasoning and explain the reasoning.**
EXPECTATION / CONTENT SPECIFICATION	AII-A.REI.1b.	Explain each step when solving rational or radical equations as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

New York State Learning Standards and Core Curriculum

Science

Grade **11** - Adopted: **2016**

STRAND / DOMAIN / UNIFYING THEME	**NY.HS.2.**	**Chemical Reactions**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**

STANDARD / CONCEPTUAL UNDERSTANDING	HS-PS1-4.	Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-PS1-12.	Use evidence to illustrate that some chemical reactions involve the transfer of electrons as an energy conversion occurs within a system.
STRAND / DOMAIN / UNIFYING THEME	**NY.HS.4.**	**Energy**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-PS3-3.	Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.
STRAND / DOMAIN / UNIFYING THEME	**NY.HS.5.**	**Waves and Electromagnetic Radiation**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-PS4-2.	Evaluate questions about the advantages of using a digital transmission and storage of information.
STRAND / DOMAIN / UNIFYING THEME	**NY.HS.8.**	**Interdependent Relationships in Ecosystems**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-LS2-7.	Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.
STRAND / DOMAIN / UNIFYING THEME	**NY.HS.14.**	**Weather and Climate**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS2-4.	Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

STRAND / DOMAIN / UNIFYING THEME	NY.HS.15.	Human Sustainability
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS3-1.	Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS3-2.	Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS3-3.	Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS3-4.	Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS3-6.	Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.

STRAND / DOMAIN / UNIFYING THEME	NY.HS.ED.	Engineering Design
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ETS1-1.	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ETS1-2.	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

STANDARD / CONCEPTUAL UNDERSTANDING	HS-ETS1-3.	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

Grade **11** - Adopted: **2011**

STRAND / DOMAIN / UNIFYING THEME	**NY.11-12.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
CATEGORY / CLUSTER / KEY IDEA		**Key Ideas and Details**
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.2.	Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.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.

STRAND / DOMAIN / UNIFYING THEME	**NY.11-12.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
CATEGORY / CLUSTER / KEY IDEA		**Craft and Structure**
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.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.
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.5.	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

STRAND / DOMAIN / UNIFYING THEME	**NY.11-12.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
CATEGORY / CLUSTER / KEY IDEA		**Integration of Knowledge and Ideas**
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.9.	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

STRAND / DOMAIN / UNIFYING THEME	**NY.11-12.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**

CATEGORY / CLUSTER / KEY IDEA		**Range of Reading and Level of Text Complexity**
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.10.	By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.

STRAND / DOMAIN / UNIFYING THEME	**NY.11-12.WHST.**	**Writing Standards for Literacy in Science and Technical Subjects**
CATEGORY / CLUSTER / KEY IDEA		**Text Types and Purposes**
STANDARD / CONCEPTUAL UNDERSTANDING	**11-12.WHST.2.**	**Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.**
EXPECTATION / CONTENT SPECIFICATION	11-12.WHST.2.d.	Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

STRAND / DOMAIN / UNIFYING THEME	**NY.11-12.WHST.**	**Writing Standards for Literacy in Science and Technical Subjects**
CATEGORY / CLUSTER / KEY IDEA		**Production and Distribution of Writing**
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.WHST.4.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.WHST.6.	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

New York State Learning Standards and Core Curriculum

Science

Grade **12** - Adopted: **2016**

STRAND / DOMAIN / UNIFYING THEME	**NY.HS.2.**	**Chemical Reactions**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-PS1-4.	Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

STANDARD / CONCEPTUAL UNDERSTANDING	HS-PS1-12.	Use evidence to illustrate that some chemical reactions involve the transfer of electrons as an energy conversion occurs within a system.
STRAND / DOMAIN / UNIFYING THEME	**NY.HS.4.**	**Energy**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-PS3-3.	Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.
STRAND / DOMAIN / UNIFYING THEME	**NY.HS.5.**	**Waves and Electromagnetic Radiation**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-PS4-2.	Evaluate questions about the advantages of using a digital transmission and storage of information.
STRAND / DOMAIN / UNIFYING THEME	**NY.HS.8.**	**Interdependent Relationships in Ecosystems**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-LS2-7.	Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.
STRAND / DOMAIN / UNIFYING THEME	**NY.HS.14.**	**Weather and Climate**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS2-4.	Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.
STRAND / DOMAIN / UNIFYING THEME	**NY.HS.15.**	**Human Sustainability**

CATEGORY / CLUSTER / KEY IDEA		Students who demonstrate understanding can:
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS3-1.	Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS3-2.	Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS3-3.	Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS3-4.	Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ESS3-6.	Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.
STRAND / DOMAIN / UNIFYING THEME	**NY.HS.ED.**	**Engineering Design**
CATEGORY / CLUSTER / KEY IDEA		**Students who demonstrate understanding can:**
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ETS1-1.	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ETS1-2.	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
STANDARD / CONCEPTUAL UNDERSTANDING	HS-ETS1-3.	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.

Grade **12** - Adopted: **2011**

STRAND / DOMAIN / UNIFYING THEME	**NY.11-12.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
CATEGORY / CLUSTER / KEY IDEA		**Key Ideas and Details**

STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.2.	Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.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.
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CATEGORY / CLUSTER / KEY IDEA		**Craft and Structure**
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.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.
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.5.	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
STRAND / DOMAIN / UNIFYING THEME	**NY.11-12.RST.**	**Reading Standards for Literacy in Science and Technical Subjects**
CATEGORY / CLUSTER / KEY IDEA		**Integration of Knowledge and Ideas**
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.9.	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
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CATEGORY / CLUSTER / KEY IDEA		**Range of Reading and Level of Text Complexity**
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.RST.10.	By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.
STRAND / DOMAIN / UNIFYING THEME	**NY.11-12.WHST.**	**Writing Standards for Literacy in Science and Technical Subjects**
CATEGORY / CLUSTER / KEY IDEA		**Text Types and Purposes**

STANDARD / CONCEPTUAL UNDERSTANDING	**11-12.WHST.2.**	**Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.**
EXPECTATION / CONTENT SPECIFICATION	11-12.WHST.2.d.	Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.
STRAND / DOMAIN / UNIFYING THEME	**NY.11-12.WHST.**	**Writing Standards for Literacy in Science and Technical Subjects**
CATEGORY / CLUSTER / KEY IDEA		**Production and Distribution of Writing**
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.WHST.4.	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
STANDARD / CONCEPTUAL UNDERSTANDING	11-12.WHST.6.	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

New York State Learning Standards and Core Curriculum

Technology Education

Grade **11** - Adopted: **1996**

STRAND / DOMAIN / UNIFYING THEME	**NY.5.**	**Technology: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.**
CATEGORY / CLUSTER / KEY IDEA	**5.1.**	**Engineering Design: Engineering design is an iterative process involving modeling and optimization used to develop technological solutions to problems within given constraints.**
STANDARD / CONCEPTUAL UNDERSTANDING	5.1.1.	Students engage in the following steps in a design process initiate and carry out a thorough investigation of an unfamiliar situation and identify needs and opportunities for technological invention or innovation.
STANDARD / CONCEPTUAL UNDERSTANDING	5.1.2.	Students identify, locate, and use a wide range of information resources including subject experts, library references, magazines, videotapes, films, electronic data bases and on-line services, and discuss and document through notes and sketches how findings relate to the problem.
STANDARD / CONCEPTUAL UNDERSTANDING	5.1.3.	Students generate creative solution ideas, break ideas into the significant functional elements, and explore possible refinements; predict possible outcomes using mathematical and functional modeling techniques; choose the optimal solution to the problem, clearly documenting ideas against design criteria and constraints; and explain how human values, economics, ergonomics, and environmental considerations have influenced the solution.
STANDARD / CONCEPTUAL UNDERSTANDING	5.1.4.	Students develop work schedules and plans which include optimal use and cost of materials, processes, time, and expertise; construct a model of the solution, incorporating developmental modifications while working to a high degree of quality (craftsmanship).

STANDARD / CONCEPTUAL UNDERSTANDING	5.1.5.	Students in a group setting, devise a test of the solution relative to the design criteria and perform the test; record, portray, and logically evaluate performance test results through quantitative, graphic, and verbal means; and use a variety of creative verbal and graphic techniques effectively and persuasively to present conclusions, predict impacts and new problems, and suggest and pursue modifications.
STRAND / DOMAIN / UNIFYING THEME	**NY.5.**	**Technology: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.**
CATEGORY / CLUSTER / KEY IDEA	**5.3.**	**Computer Technology: Computers, as tools for design, modeling, information processing, communication, and system control, have greatly increased human productivity and knowledge.**
STANDARD / CONCEPTUAL UNDERSTANDING	5.3.5.	Students develop an understanding of computer programming and attain some facility in writing computer programs.

New York State Learning Standards and Core Curriculum

Technology Education

Grade **12** - Adopted: **1996**

STRAND / DOMAIN / UNIFYING THEME	**NY.5.**	**Technology: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.**
CATEGORY / CLUSTER / KEY IDEA	**5.1.**	**Engineering Design: Engineering design is an iterative process involving modeling and optimization used to develop technological solutions to problems within given constraints.**
STANDARD / CONCEPTUAL UNDERSTANDING	5.1.1.	Students engage in the following steps in a design process initiate and carry out a thorough investigation of an unfamiliar situation and identify needs and opportunities for technological invention or innovation.
STANDARD / CONCEPTUAL UNDERSTANDING	5.1.2.	Students identify, locate, and use a wide range of information resources including subject experts, library references, magazines, videotapes, films, electronic data bases and on-line services, and discuss and document through notes and sketches how findings relate to the problem.
STANDARD / CONCEPTUAL UNDERSTANDING	5.1.3.	Students generate creative solution ideas, break ideas into the significant functional elements, and explore possible refinements; predict possible outcomes using mathematical and functional modeling techniques; choose the optimal solution to the problem, clearly documenting ideas against design criteria and constraints; and explain how human values, economics, ergonomics, and environmental considerations have influenced the solution.
STANDARD / CONCEPTUAL UNDERSTANDING	5.1.4.	Students develop work schedules and plans which include optimal use and cost of materials, processes, time, and expertise; construct a model of the solution, incorporating developmental modifications while working to a high degree of quality (craftsmanship).
STANDARD / CONCEPTUAL UNDERSTANDING	5.1.5.	Students in a group setting, devise a test of the solution relative to the design criteria and perform the test; record, portray, and logically evaluate performance test results through quantitative, graphic, and verbal means; and use a variety of creative verbal and graphic techniques effectively and persuasively to present conclusions, predict impacts and new problems, and suggest and pursue modifications.
STRAND / DOMAIN / UNIFYING THEME	**NY.5.**	**Technology: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.**

CATEGORY / CLUSTER / KEY IDEA	5.3.	Computer Technology: Computers, as tools for design, modeling, information processing, communication, and system control, have greatly increased human productivity and knowledge.
STANDARD / CONCEPTUAL UNDERSTANDING	5.3.5.	Students develop an understanding of computer programming and attain some facility in writing computer programs.