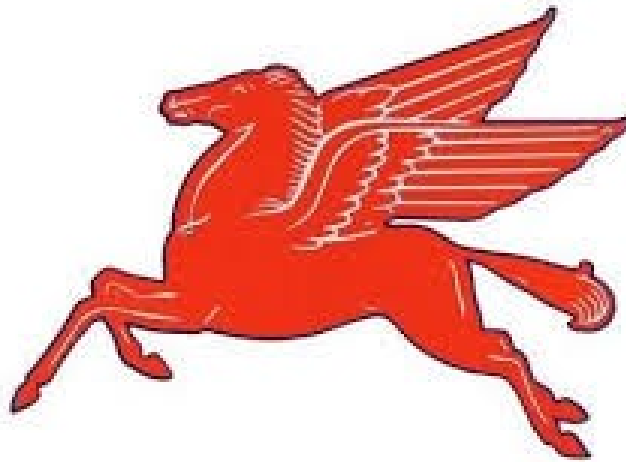# Curriculum Management System

PAULSBORO PUBLIC SCHOOLS

STEAM Curriculum Grade 6

UPDATED 2020-2021

For adoption by all regular education
programs as specified and for adoption
or adaptation by all Special Education   **Board Approved: October 2021**
Programs in accordance with Board of
Education Policy.

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Paulsboro Public Schools

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Mr. Matthew J. Browne, Principal, grades 3-6
Mr. Paul Morina, Principal, grades 7-12

Paulsboro Public Schools

Mission Statement

The mission of the Paulsboro School District is to work with students, parents, educators, and community to develop excellence in education while preparing each student to be viable and productive citizens in society. Our goal is to develop the unique potential of the whole student by creating a challenging and diverse learning climate that prepares students for the 21st Century and is rich in tradition and pride.

PACING CHART (2020-2021)

TOPIC	# OF DAYS	DATES	COMMENTS
Robotics	*10-20*	*vary*	focus on real world connection
building			sub-topic option
programming			sub-topic option
career exploration			sub-topic option
Engineering	10-20	vary	focus on real world connection
renewable energy			sub-topic option
air & water quality			sub-topic option
construction design			sub-topic option
career exploration			sub-topic option
Science	10-20	vary	focus on real world connection
biomedical			sub-topic option
forensic			sub-topic option
climate change			sub-topic option
career exploration			sub-topic option
Technology	10-20	vary	focus on real world connection
virtual & augmented reality			sub-topic option
circuits & electronics			sub-topic option
Animation & video game design			sub-topic option
digital textiles			sub-topic option
career exploration			sub-topic option

Dates and number of days will vary based on resources available and school schedules.

DEFINITIONS

NJ Student Learning Standards – Clear and specific benchmarks for students' achievement in various content areas. The standards ensure that each child receives a "thorough and efficient education".

21st Century Life and Careers Standards – These skills that are comprised of the "12 Career Ready Practices" and Standards 9.1 through 9.4. The organization of these standards intends to enable students to make informed decisions that prepare them to engage as active citizens in global society and be prepared for the opportunities of the 21st century workplace.

ELA Companion Standards – Consists of standards for reading and writing in History, Social Studies, Science and Technical subjects. ELA curricula

Gifted and Talented Learners – Students with high-ability who may need more depth and complexity in instruction.

Special Education Learners – Students in need of supports and interventions to improve student achievement

English Language Learners – Students with a native language other than English or who are at varying degrees of English language proficieny.

QUARTER 1 –
Big Idea: Robotics
Topics: Build/Program

Standards:	GOAL
NJ Student Learning Standards: NGSS 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-	**SWBAT** design and build robots. **SWBAT** program/ code robots to perform tasks/functions.

Essential Questions	Assessments
1. How will you design and build a robot? 2. What task/ function can the robots perform?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation.

Enduring Understanding	Resources

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. **21st Century Life and Careers:** 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 CRP12. Work productively in teams while using cultural global competence **Technology Standards:** 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. **ELA Companion Standards:** NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of	Design & Building Robots from both models and imagination Program/ build robots to perform various tasks/ functions	Ipads Wonder Workshop robots UB Tech robot kits LEGO Mindstorm robots Chromebooks Ipads

contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

MODIFICATIONS:

Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning

Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials

 English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks

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QUARTER 1 –

Big Idea: Robotics

Topics: Career Exploration

Standards:	GOAL
NJ Student Learning Standards: NGSS MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient	**SWBAT** explore careers in the field of robotics
	Essential Questions / **Assessments**

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. **21st Century Life and Careers:** 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 CRP12. Work productively in teams while using cultural global competence **Technology Standards:**	1. What are careers in robotics?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation.

Enduring Understanding	**Resources**
Careers in robotics	Ipads Wonder Workshop robots UB Tech robot kits LEGO Mindstorm robots Chromebooks Ipads

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.

ELA Companion Standards:
NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

MODIFICATIONS:
Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning
Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials
 English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks

QUARTER 2 –
Big Idea: Engineering
Topics: Renewable Energy

Standards:	GOAL
NJ Student Learning Standards: NGSS MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. **21st Century Life and Careers:** CRP1. Act as a responsible and contributing citizen and employee	**SWBAT** research & design sources of renewable energy

Essential Questions	Assessments
1. What is renewable energy?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation.

Enduring Understanding	Resources

CRP5. Consider the environmental, social and economic impacts of decisions CRP7. Employ valid and reliable research strategies **Technology Standards:** 8.2.5.D.1 Identify and collect information about a problem that can be solved by technology, generate ideas to solve the problem, and identify constraints and trade-offs to be considered. 8.2.5.D.2 Evaluate and test alternative solutions to a problem using the constraints and trade-offs identified in the design process to evaluate potential solutions **ELA Companion Standards:** NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate. **MODIFICATIONS:** Gifted and Talented Learners: student centered, compact curriculum, flexible pacing,	Engineering Design Process	Renewable Energy Resources Air & Water Resources Construction Design Resources Chromebooks Ipads

assume ownership of own learning Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks		

QUARTER 2 –
Big Idea: Engineering
Topics: Air & Water Quality

Standards:	**GOAL**	
NJ Student Learning Standards: NGSS MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some	**SWBAT** research & design measures of air & water quality	
	Essential Questions	**Assessments**
	1. How is air & water quality measured?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation

individuals' probability of surviving and reproducing in a specific environment.		in a team environment, and/or data collection of investigation.

21st Century Life and Careers:

CRP1. Act as a responsible and contributing citizen and employee

CRP5. Consider the environmental, social and economic impacts of decisions

CRP7. Employ valid and reliable research strategies

	Enduring Understanding	**Resources**
Technology Standards: 8.2.5.D.1 Identify and collect information about a problem that can be solved by technology, generate ideas to solve the problem, and identify constraints and trade-offs to be considered. 8.2.5.D.2 Evaluate and test alternative solutions to a problem using the constraints and trade-offs identified in the design process to evaluate potential solutions **ELA Companion Standards:** NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative	Engineering Design Process	Renewable Energy Resources Air & Water Resources Construction Design Resources Chromebooks Ipads

tasks, demonstrating command of formal English when indicated or appropriate.
MODIFICATIONS:
Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning
Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials
 English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks

QUARTER 2 –

Big Idea: Engineering

Topics: Renewable Energy/ Air & Water Quality/ Construction Design/ Career Exploration

Standards:	GOAL
NJ Student Learning Standards: NGSS MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater	**SWBAT** research & create construction design
	Essential Questions / **Assessments**

resources are the result of past and current geoscience processes. MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. **21st Century Life and Careers:** CRP1. Act as a responsible and contributing citizen and employee CRP5. Consider the environmental, social and economic impacts of decisions CRP7. Employ valid and reliable research strategies **Technology Standards:** 8.2.5.D.1 Identify and collect information about a problem that can be solved by technology, generate ideas to solve the problem, and identify constraints and trade-offs to be considered. 8.2.5.D.2 Evaluate and test alternative solutions to a problem using the constraints and trade-offs identified in the design process to evaluate potential solutions **ELA Companion Standards:** NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose,	1. What is construction design?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation.

Enduring Understanding	**Resources**
Engineering Design Process	Renewable Energy Resources Air & Water Resources Construction Design Resources Chromebooks Ipads

and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

MODIFICATIONS:

Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning

Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials

English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks

QUARTER 2 – **Big Idea:** Engineering **Topics:** Career Exploration	
Standards:	**GOAL**
NJ Student Learning Standards: NGSS MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.	**SWBAT** explore careers in the field of engineering

MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. **21st Century Life and Careers:** CRP1. Act as a responsible and contributing citizen and employee CRP5. Consider the environmental, social and economic impacts of decisions CRP7. Employ valid and reliable research strategies **Technology Standards:** 8.2.5.D.1 Identify and collect information about a problem	

Essential Questions	Assessments
1. What are careers in engineering?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation.
Enduring Understanding	**Resources**

that can be solved by technology, generate ideas to solve the problem, and identify constraints and trade-offs to be considered.	Careers in Engineering	Renewable Energy Resources Air & Water Resources Construction Design Resources Chromebooks Ipads	
8.2.5.D.2 Evaluate and test alternative solutions to a problem using the constraints and trade-offs identified in the design process to evaluate potential solutions			
ELA Companion Standards: NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.			
MODIFICATIONS: Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning			
Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials			
English Language Learners:			

extended time, teacher modeling, simplified instructions, frequent breaks		

QUARTER 3 –
Big Idea: Science
Topic: Biomedical

Standards:	GOAL	
NJ Student Learning Standards: NGSS MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past	**SWBAT** research & explore biomedical science.	
	Essential Questions	**Assessments**
	1. What is biomedical science?	(*Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.*) Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation.

	Enduring Understanding	Resources
and current geoscience processes. **21st Century Life and Careers:** CRP1. Act as a responsible and contributing citizen and employee. CRP5. Consider the environmental, social and economic impacts of decisions. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. **Technology Standards:** 8.2.5.A.4 Compare and contrast how technologies have changed over time due to human needs and economic, political and/or cultural influences. 8.2.5.A.5 Identify how improvement in the understanding of materials science impacts technologies. 8.2.8.A.4 Redesign an existing product that impacts the environment to lessen its impact(s) on the environment. **ELA Companion Standards:** NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of	Aspects of biomedical science	Biomedical Resources Forensic Resources Climate Change Resources Chromebooks Ipads

presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.
MODIFICATIONS:
Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning
Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials
English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks

QUARTER 3 –
Big Idea: Science
Topic: Forensic

Standards:	GOAL
NJ Student Learning Standards: NGSS MS-LS1-1. Conduct an investigation to provide evidence that living things are	**SWBAT** research & explore forensic science.
	Essential Questions / **Assessments**

made of cells; either one cell or many different numbers and types of cells. MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. **21st Century Life and Careers:** CRP1. Act as a responsible and contributing citizen and employee. CRP5. Consider the environmental, social and economic impacts of decisions. CRP7. Employ valid and reliable research strategies. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. **Technology Standards:** 8.2.5.A.4 Compare and contrast how technologies have changed over time due to human needs and economic, political and/or cultural influences. 8.2.5.A.5 Identify how improvement in the understanding of materials science impacts technologies.	1. What is forensic science?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation.

Enduring Understanding	**Resources**
Aspects of forensic science	Biomedical Resources Forensic Resources Climate Change Resources Chromebooks Ipads

8.2.8.A.4 Redesign an existing product that impacts the environment to lessen its impact(s) on the environment. **ELA Companion Standards:** NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate. **MODIFICATIONS:** Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks			

QUARTER 3 –

Big Idea: Science
Topic: Climate Change

Standards:	GOAL
NJ Student Learning Standards: NGSS MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. **21st Century Life and Careers:** CRP1. Act as a responsible and contributing citizen and employee. CRP5. Consider the environmental, social and economic impacts of decisions. CRP7. Employ valid and reliable research strategies.	**SWBAT** research & explore climate change.

Essential Questions	Assessments
1. What is climate change?	(*Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.*) Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation.

Enduring Understanding	Resources

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. **Technology Standards:** 8.2.5.A.4 Compare and contrast how technologies have changed over time due to human needs and economic, political and/or cultural influences. 8.2.5.A.5 Identify how improvement in the understanding of materials science impacts technologies. 8.2.8.A.4 Redesign an existing product that impacts the environment to lessen its impact(s) on the environment. **ELA Companion Standards:** NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate. **MODIFICATIONS:** Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning	Solutions to climate change	Biomedical Resources Forensic Resources Climate Change Resources Chromebooks Ipads

Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks		

QUARTER 3 –

Big Idea: Science
Topic: Career Exploration

Standards:	GOAL	
NJ Student Learning Standards: NGSS MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater	**SWBAT** explore careers in science.	
	Essential Questions	**Assessments**
	1. What are careers in science?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation.

resources are the result of past and current geoscience processes.

21st Century Life and Careers:

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

CRP5. Consider the environmental, social and economic impacts of decisions.

CRP7. Employ valid and reliable research strategies.

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

Technology Standards:

8.2.5.A.4 Compare and contrast how technologies have changed over time due to human needs and economic, political and/or cultural influences.

8.2.5.A.5 Identify how improvement in the understanding of materials science impacts technologies.

8.2.8.A.4 Redesign an existing product that impacts the environment to lessen its impact(s) on the environment.

ELA Companion Standards:

NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and

Enduring Understanding	**Resources**
Careers in Science	Biomedical Resources Forensic Resources Climate Change Resources Chromebooks Ipads

enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.
MODIFICATIONS:
Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning
Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials
English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks

QUARTER 4 –
Big Idea: Technology
Topic: Virtual & Augmented Reality

Standards:	GOAL	
NJ Student Learning Standards: NGSS Students who demonstrate understanding can: MS-ETS1-1. Define the criteria and	**SWBAT** explore virtual & augmented reality.	
	Essential Questions	**Assessments**

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. **21st Century Life and Careers:** CRP2. Apply appropriate academic and technical skills. CRP6. Demonstrate creativity and innovation. CRP10. Plan education and career paths aligned to personal goals. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence. **Technology Standards:**	1. What is virtual & augmented reality?	 Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation

Enduring Understanding	**Resources**
Aspects of virtual & augmented reality	Virtual Reality Resources Augmented Reality Resources Circuit Resources Electronic Resources Animation Resources Video Game Design Resources Digital Textile Resources Chromebooks Ipads

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.
8.2.5.C.1 Collaborate with peers to illustrate components of a designed system
8.2.5.C.7 Work with peers to redesign an existing product for a different purpose

ELA Companion Standards:
NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

MODIFICATIONS:
Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning
Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials
English Language Learners:

extended time, teacher modeling, simplified instructions, frequent breaks		

QUARTER 4 –
Big Idea: Technology
Topic: Electronics

Standards:	GOAL	
NJ Student Learning Standards: NGSS Students who demonstrate understanding can: 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	**SWBAT** explore circuits & electronics.	
	Essential Questions	**Assessments**
	1. What are circuits & electronics?	(*Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.*) Formative assessments include: interactive response, observation, active participation

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.		in a team environment, and/or data collection of investigation
21st Century Life and Careers: CRP2. Apply appropriate academic and technical skills. CRP6. Demonstrate creativity and innovation. CRP10. Plan education and career paths aligned to personal goals. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence. **Technology Standards:** 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. 8.2.5.C.1 Collaborate with peers to illustrate components of a designed system 8.2.5.C.7 Work with peers to redesign an existing product for a different purpose **ELA Companion Standards:** NJSLSA.SL4. Present information, findings, and	**Enduring Understanding**	**Resources**
	Aspects of circuits & electronics	Virtual Reality Resources Augmented Reality Resources Circuit Resources Electronic Resources Animation Resources Video Game Design Resources Digital Textile Resources Chromebooks Ipads

supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

MODIFICATIONS:

Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning

Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials

English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks

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QUARTER 4 –
Big Idea: Technology
Topic: Video Game Design

Standards:	GOAL

NJ Student Learning Standards: NGSS Students who demonstrate understanding can: 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	**SWBAT** explore animation & video game design.	
	Essential Questions	**Assessments**
	1. What is animation & video game design?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation
	Enduring Understanding	**Resources**

that an optimal design can be achieved. **21st Century Life and Careers:** CRP2. Apply appropriate academic and technical skills. CRP6. Demonstrate creativity and innovation. CRP10. Plan education and career paths aligned to personal goals. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence. **Technology Standards:** 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. 8.2.5.C.1 Collaborate with peers to illustrate components of a designed system 8.2.5.C.7 Work with peers to redesign an existing product for a different purpose **ELA Companion Standards:** NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6.	Aspects of animation & video game design	Virtual Reality Resources Augmented Reality Resources Circuit Resources Electronic Resources Animation Resources Video Game Design Resources Digital Textile Resources Chromebooks Ipads

Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

MODIFICATIONS:

Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning

Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials

English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks

QUARTER 4 –

Big Idea: Technology
Topic: Digital Textiles

Standards:	GOAL
NJ Student Learning Standards: NGSS Students who demonstrate understanding can: 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	**SWBAT** explore digital textiles.
	Essential Questions **Assessments**

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. **21st Century Life and Careers:** CRP2. Apply appropriate academic and technical skills. CRP6. Demonstrate creativity and innovation. CRP10. Plan education and career paths aligned to personal goals. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence. **Technology Standards:** 8.2.5.C.4 Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best	1. What are digital textiles?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation

Enduring Understanding	**Resources**
Aspects of digital textiles	Virtual Reality Resources Augmented Reality Resources Circuit Resources Electronic Resources Animation Resources Video Game Design Resources Digital Textile Resources Chromebooks Ipads

results with supporting sketches or models.
8.2.5.C.1 Collaborate with peers to illustrate components of a designed system
8.2.5.C.7 Work with peers to redesign an existing product for a different purpose
ELA Companion Standards:
NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.
MODIFICATIONS:
Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning
Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials
English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks

QUARTER 4 –
Big Idea: Technology
Topic: Career Exploration

Standards:	GOAL
NJ Student Learning Standards: NGSS Students who demonstrate understanding can: 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.	**SWBAT** explore careers in technology.

Essential Questions	Assessments
1. What are careers in technology?	*(Include benchmark assessments where possible – This could be a link to the assessment, a page reference in a book to the assessment or an attachment following this document referencing these standards and this goal.)* Formative assessments include: interactive response, observation, active participation in a team environment, and/or data collection of investigation

Enduring Understanding	Resources

21st Century Life and Careers: CRP2. Apply appropriate academic and technical skills. CRP6. Demonstrate creativity and innovation. CRP10. Plan education and career paths aligned to personal goals. CRP11. Use technology to enhance productivity. CRP12. Work productively in teams while using cultural global competence. **Technology Standards:** 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. 8.2.5.C.1 Collaborate with peers to illustrate components of a designed system 8.2.5.C.7 Work with peers to redesign an existing product for a different purpose **ELA Companion Standards:** NJSLSA.SL4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations. NJSLSA.SL6. Adapt speech to a variety of contexts and communicative	Careers in technology	Virtual Reality Resources Augmented Reality Resources Circuit Resources Electronic Resources Animation Resources Video Game Design Resources Digital Textile Resources Chromebooks Ipads	

tasks, demonstrating command of formal English when indicated or appropriate. **MODIFICATIONS:** Gifted and Talented Learners: student centered, compact curriculum, flexible pacing, assume ownership of own learning Special Education Learners: written list of instructions, extended time, alternate projects, flexible use of materials English Language Learners: extended time, teacher modeling, simplified instructions, frequent breaks			