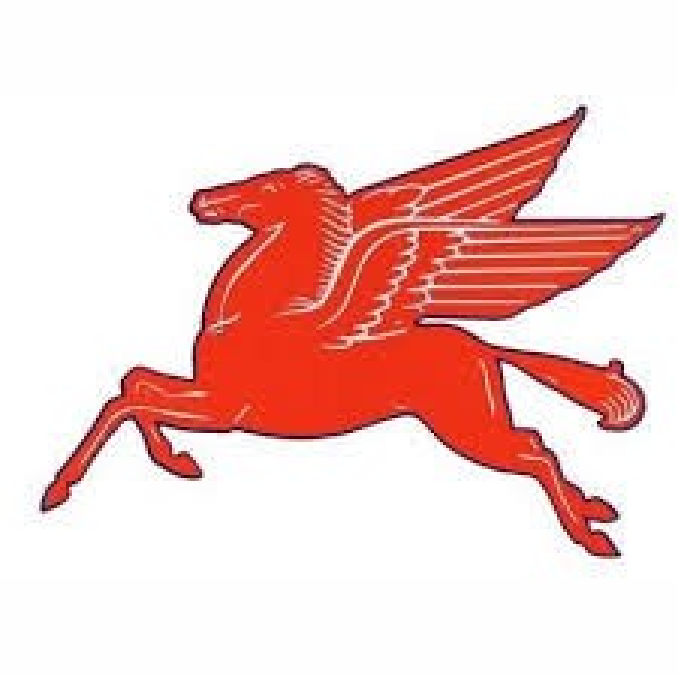
Curriculum Management System

PAULSBORO PUBLIC SCHOOLS



STEAM Curriculum Grade 3

UPDATED 2020-2021

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

Board Approved: October 2021

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Paulsboro Public Schools

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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:

NJ Student Learning Standards: NGSS

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.

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. 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.

21st Century Life and Careers:

CRP6. Demonstrate creativity and innovation

GOAL

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**

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 **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	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

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

QUARTER 1 – **Big Idea:** Robotics **Topics:** Career Exploration		
Standards: **NJ Student Learning Standards:** NGSS 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes	**GOAL**	
	SWBAT explore careers in the field of robotics	
	Essential Questions	**Assessments**

specified criteria for success and constraints on materials, time, or cost. 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. 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. **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,	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

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 **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: **NJ Student Learning Standards:** NGSS 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.	**GOAL** **SWBAT** research & design sources of renewable energy	
	Essential Questions	**Assessments**

3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change **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, and audience	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**
	Engineering Design Process	Renewable Energy Resources Air & Water Resources Construction Design Resources Chromebook Ipads

NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations **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**		
Standards: **NJ Student Learning Standards:** NGSS 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.	**GOAL**	
	SWBAT research & design measures of air & water quality	
	Essential Questions	**Assessments**

3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change **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, and audience	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 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

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QUARTER 2 – **Big Idea:** Engineering **Topics: Construction Design**		
Standards: **NJ Student Learning Standards:** NGSS 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.	**GOAL**	
	SWBAT research & create construction design	
	Essential Questions	**Assessments**

3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change **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, and audience	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 Chromebook Ipads

NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations **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: **NJ Student Learning Standards:** NGSS 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.	**GOAL**	
	SWBAT explore careers in the field of engineering	
	Essential Questions	**Assessments**

3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change **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, and audience	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**
	Careers in Engineering	Renewable Energy Resources Air & Water Resources Construction Design Resources Chromebooks Ipads

NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations **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: **NJ Student Learning Standards:** NGSS 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles	**GOAL** **SWBAT** research & explore biomedical science. **Essential Questions** **Assessments**

but all have in common birth, growth, reproduction, and death. 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change 3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard **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:**	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**
	Aspects of biomedical science	Biomedical Resources Forensic Resources Climate Change Resources Chromebooks

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 **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**

<table>
<tr>
<td rowspan="5">NJ Student Learning Standards: NGSS
3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change
3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard
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.</td>
<td colspan="2">SWBAT research & explore forensic science.</td>
</tr>
<tr>
<td>Essential Questions</td>
<td>Assessments</td>
</tr>
<tr>
<td>1. What is forensic science?</td>
<td>(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.</td>
</tr>
<tr>
<td>Enduring Understanding</td>
<td>Resources</td>
</tr>
<tr>
<td>Aspects of forensic science</td>
<td>Biomedical Resources
Forensic Resources
Climate Change Resources
Chromebooks</td>
</tr>
</table>

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 **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**

<table>
<tr><td rowspan="5">NJ Student Learning Standards: NGSS
3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change
3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard
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.</td><td colspan="2">SWBAT research & explore climate change.</td></tr>
<tr><td>Essential Questions</td><td>Assessments</td></tr>
<tr><td>1. What is climate change?</td><td>(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.</td></tr>
<tr><td>Enduring Understanding</td><td>Resources</td></tr>
<tr><td>Solutions to climate change</td><td>Biomedical Resources
Forensic Resources
Climate Change Resources
Chromebooks</td></tr>
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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 **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:** Career Exploration	
Standards:	**GOAL**

<table>
<tr>
<td rowspan="5">NJ Student Learning Standards: NGSS
3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change
3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard
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.</td>
<td colspan="2">SWBAT explore careers in science.</td>
</tr>
<tr>
<td>Essential Questions</td>
<td>Assessments</td>
</tr>
<tr>
<td>1. What are careers in science?</td>
<td>(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.</td>
</tr>
<tr>
<td>Enduring Understanding</td>
<td>Resources</td>
</tr>
<tr>
<td>Careers in Science</td>
<td>Biomedical Resources
Forensic Resources
Climate Change Resources
Chromebooks</td>
</tr>
</table>

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 **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:

NJ Student Learning Standards: NGSS 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. 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. 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.

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

GOAL	
SWBAT explore virtual & augmented reality.	
Essential Questions	**Assessments**
1. What is virtual & augmented reality?	(*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**

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 **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	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

QUARTER 4 –

Big Idea: Technology

Topic: Electronics

Standards:

NJ Student Learning Standards: NGSS 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. 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. 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.

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

GOAL

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 in a team environment, and/or data collection of investigation

Enduring Understanding	Resources

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QUARTER 4 –

Big Idea: Technology

Topic: Video Game Design & Animation

Standards:

NJ Student Learning Standards: NGSS 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. 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. 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.

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

GOAL

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

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 **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	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

QUARTER 4 –

Big Idea: Technology

Topic: Digital Textiles

Standards:

NJ Student Learning Standards: NGSS 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. 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. 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.

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

GOAL

SWBAT explore digital textiles

Essential Questions	Assessments
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

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

QUARTER 4 –

Big Idea: Technology

Topic: Career Exploration

Standards:

NJ Student Learning Standards: NGSS 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. 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. 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.

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

GOAL

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

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 **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	Careers in technology	Virtual Reality Resources Augmented Reality Resources Circuit Resources Electronic Resources Animation Resources Video Game Design Resources Digital Textile Resources Chromebooks