Course:Technology & Design

Introduction to Tech & Design Lab: Unit 1

Grade Level(s): 3	**Length of Unit: 1 week**

Unit Rationale:
Students will be using technology to support their learning in a variety of platforms during the school year. In this unit, students will learn about safety and rules of the tech lab, and how they should behave appropriately during technology classroom. Teachers will discuss appropriate and acceptable usage of the computers and technology equipment not only within the lab, but within their classrooms as well. Students will also receive their passwords, and log onto the Chromebooks.

Stage 1 - Desired Results

Understandings:

Students will understand that…

- *Students will be using technology to support their learning in a variety of platforms during the school year. In this unit, students will learn about safety and rules of the tech lab, and how they should behave appropriately during technology classroom. Teacher will discuss appropriate and acceptable usage of the computers and technology equipment not only within the lab, but within their classrooms as well. Students will also receive their passwords, and log onto the Chromebooks.*

Essential Questions:

- What does it mean to use the computer appropriately?
- What are the expectations of behavior in the technology lab?
- How does a student log onto the computer network at school?
- What projects are you excited about this year?

Content:

Students will know…

- *the appropriate rules in the technology lab.*
- *log on to the chromebooks, using their username and password.*

Skills:

Students will be able to…

- *Identify the rules of the technology lab.*
- *Know the procedures of the classroom.*
- *Understand safety in the classroom.*
- *Memorize username and password.*

NJ Student Learning Standards - Math
CRP2. Apply appropriate academic and technical skills

CRP11. Use technology to enhance productivity

NJSLS-Career Readiness, Life Literacies,and Key Skills:Standards & Disciplinary Concepts (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Career Awareness, Exploration and Preparation Standards)

CLKS Practices:

1. Act as a responsible and contributing community members and employee
5. Demonstrate creativity and innovation
8. Use technology to enhance productivity increase collaboration and communicate effectively

Explanation of how **CLKS Practices** connect to the unit:
Students will learn about the responsibilities of learning in the technology lab, learning how technology, collaboration and creativity will be used throughout the school year.

9.2 standards

Explanation of how 9.2 standards connect to the unit:

Interdisciplinary Standards

SL.3.3. Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.

Explanation of how interdisciplinary standards connect to the unit:
Comprehension and Collaboration

Technology Integration (9.4 Standards) -

9.4.5.DC.4: Model safe, legal, and ethical behavior when using online or offline technology (e.g., 8.1.5.NI.2).
9.4.5.DC.5: Identify the characteristics of a positive and negative online identity and the lasting implications of online activity.

Explanation of how 9.4 standards connect to the unit:

Students will be involved in discussions on how to use the technology safely within the classroom setting, and at home, and what it means to use computers responsibly.

Stage 2- Assessment Evidence:

Assessment:

Formative	*Exit tickets, oral and written responses*
Summative	*Q & A on brainpop*

Alternative	
Benchmark	
Other	*Cyber Safety Poster*

Stage 3 - Learning Plan	
Learning Activities: ● (please bullet) *Trajectory of how you are bringing students to develop the understandings listed above*	**ELL:** ● Extend time requirements ● Preferential seating ● Check often for understanding ● Oral/visual directions/prompts when needed ● Provide hands-on materials and/ manipulatives for students to practice using new content knowledge *The ELL Math Resources Folder is located* **HERE**
	G&T: ● Allow students to take an active role in teaching content to other students in the school ● Propose interest-based extension activities for early finishers
	Special Ed: ● Utilize a multi-sensory approach during instruction ● Modify test content and/or format ● Preferential seating as needed
	504: ● Review, restate and repeat ● Provide notes ● Chunk assignments

	Students at Risk: • Deliver instruction utilizing varied learning styles including audio, visual and tactile/kinesthetic • Provide individual instruction as needed • Meet with students frequently to ensure understanding • Allow verbal rather than written responses
	Link to Math Differentiation Chart and **2021 Accommodations Chart**

Core Instructional Resources

Teacher Pedagogical Resources: *What skills/strategies, and resources helped the teacher design this unit*

Student Materials: *What materials are provided to students during this unit. (core texts, websites, etc.)*

***All materials must list a Lexile Level (https://hub.lexile.com/find-a-book/search)*

Notes:

Course:Technology & Design

Keyboarding Unit 2

Grade Level(s): 3	**Length of Unit: 3 weeks**

Unit Rationale:
Communicating on the computer with word processing will be essential to the success of students within their academic careers, and beyond. Students will learn proper technique and keyboarding skills using a typing program. To enhance these typing skills, students will need repetition and practice, and by tracking their progress, students and teachers will be able to assess how well they have improved in their typing skills throughout the year.

Stage 1 - Desired Results

Understandings:

Students will understand that…

- *- Students will develop keyboarding proficiency through a variety of strategies such as: direct instruction, guided review and practice, and timed sessions to determine speed and accuracy.*
- *- Students will utilize online tools such as* ***http://typingclub.com*** *to improved speed and accuracy.*
- *or*
- *1. Keyboarding technique is an essential tool for computer literacy.*
- *2. Speed and accuracy must be developed together.*

Essential Questions:

1. What are the proper techniques to keyboarding?
2. Why is it important to be able to type appropriately?
3. How do you develop faster and more accurate typing?

Content:

Students will know…

- *·Students will be able to log on to the program www.typingclub.com using a username and password provided by the teacher.*
- *Students will be able to track their progress and set goals for themselves.*

Skills:

Students will be able to…

- *- · demonstrate appropriate keyboarding techniques.*
- *· evaluate their typing efficiency and progress*
- *· demonstrate the ability to keyboard from straight-copy material*
- *· demonstrate the ability to proofread*
- *demonstrate improvement with speed and accuracy throughout the course*
-

NJ Student Learning Standards -

8.1.2.A.1 Identify the basic features of a digital device and explain its purpose.
8.1.2.A.2 Create a document using a word processing application.

8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).

21st Century College & Career Practice Standards

CRP2. Apply appropriate academic and technical skills
CRP11. Use technology to enhance productivity

NJSLS-Career Readiness, Life Literacies,and Key Skills:Standards & Disciplinary Concepts (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Career Awareness, Exploration and Preparation Standards)

Career readiness, life literacies, and key skills education *provides students with the necessary skills to make informed career and financial decisions, engage as responsible community members in a digital society, and to successfully meet the challenges and opportunities in an interconnected global economy.*
https://www.nj.gov/education/standards/clicks/index.shtml or
https://www.nj.gov/education/standards/clicks/Docs/2020NJSLS-CLKS.pdf (Pgs 15-16)

Two or three Career Readiness, Life Literacies, and Key Skills Practices standards should be left in each unit, the rest should be removed from the list below.

CLKS Practices:

8. Use technology to enhance productivity increase collaboration and communicate effectively
9. Work productively in teams while using cultural/global competence

Explanation of how **CLKS Practices** connect to the unit:

Students will work productively as a team to use keyboarding as a way to communicate effectively. Discussions will take place on how keyboarding will help students will their future communications within the workspace.

9.2 standards

9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.

Explanation of how 9.2 standards connect to the unit:

Discuss how keyboarding is required in most every career, and how training is required for keyboarding in specific job qualifications.

Interdisciplinary Standards

W.K.6 With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.

NJSLSA.W6 Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

Explanation of how interdisciplinary standards connect to the unit:
Students will learn how to use digital tools as a way to produce writing and publishing.

Technology Integration (9.4 Standards)

9.4.5.DC.4: Model safe, legal, and ethical behavior when using online or offline technology (e.g., 8.1.5.NI.2).
9.4.5.DC.6: Compare and contrast how digital tools have changed social interactions (e.g.,
9.4.5.TL.1: Compare the common uses of at least two different digital tools and identify the advantages and disadvantages of using each. •

Explanation of how 9.4 standards connect to the unit:
Students will learn the importance of keyboarding, and how it has changed the way we communicate. Students will use keyboarding platforms as a way to model safe online interactions.

Stage 2- Assessment Evidence:	
Assessment:	
Formative	*Student reflection*
Summative	*Leveled typing tests*
Alternative	
Benchmark	*Benchmark typing tests*
Other	*Class typing competitions*

Stage 3 - Learning Plan	
Learning Activities: ● Learn the proper techniques of keyboarding through platform typingclub.com ● Take a pre-test to assess what level typing speed and accuracy a student is in the beginning of the year. ● Progress through hundreds of levels, keeping your score and compete against students in your class and other classes.	**ELL:** ● Extend time requirements ● Preferential seating ● Check often for understanding ● Oral/visual directions/prompts when needed ● Provide hands-on materials and/ manipulatives for students to practice using new content knowledge

• Take a post-test at the end of the school year to see how far you've progressed since then.	
	G&T: • Allow students to take an active role in teaching content to other students in the school • Propose interest-based extension activities for early finishers
	Special Ed: • Utilize a multi-sensory approach during instruction • Modify test content and/or format • Preferential seating as needed
	504: • Review, restate and repeat • Provide notes • Chunk assignments
	Students at Risk: • Deliver instruction utilizing varied learning styles including audio, visual and tactile/kinesthetic • Provide individual instruction as needed • Meet with students frequently to ensure understanding • Allow verbal rather than written responses

Core Instructional Resources

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Student Materials: *What materials are provided to students during this unit. (core texts, websites, etc.)*

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Notes:

Course:Technology & Design

Build a Bridge: Unit #3

Grade Level(s): 3	**Length of Unit: 2 weeks**

Unit Rationale:
In this mini unit, students will explore the construction process of bridges, and how they are designed, by working in a collaborative problem solving group. Students will be asked to use an alternative use for an existing product to create a bridge out of paper, which supports the weight of as many pennies as possible. Students will track their results, as they increase the lengths of the overhang gaps. Students will work together to problem solve and evaluate their results. After the project is complete, students will explore on the web some various types of bridges, as well as the Bridge Builder app.

Stage 1 - Desired Results

Understandings:

Students will understand that…

- *1. Understand the importance of using alternative resources to create a new product.*
- *2. it is important to work collaboratively to solve a common problem.*
- *3. there are many scientific principles (weight, gravity) that are involved in building a bridge.*

Essential Questions:

- -What is the design process?
- Why is it important to work in groups to solve a problem?
- What is the science behind making the paper stronger, and why do the folds strengthen the paper?
- How have technologies evolved to change bridge making?

Content:

Students will know…

- · how to design a bridge using paper
- · work collaboratively to reach a common goal
- · understand the various types of bridges
- use an application to enhance learning the design process
-

Skills:

Students will be able to…

- -

- use paper to design a strong structural bridge
- understand the design process
- open/close app
- drag, pinch, rotate and drop on ipad

NJ Student Learning Standards -

8.2.5.C.1 Collaborate with peers to illustrate components of a designed system.
8.2.5.C.2 Explain how specifications and limitations can be used to direct a product's development.
8.2.5.C.3 Research how design modifications have lead to new products.
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.5 Explain the functions of a system and subsystems.
8.2.5.C.6 Examine a malfunctioning tool and identify the process to troubleshoot and present options to repair the tool.
8.2.5.C.7 Work with peers to redesign an existing product for a different purpose.

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.

21st Century College & Career Practice Standards

CRP2. Apply appropriate academic and technical skills
CRP4. Communicate clearly and effectively and with reason
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP6. Demonstrate creativity and innovation.
CRP9. Model integrity, ethical leadership and effective management.
CRP11. Use technology to enhance productivity
CRP12. Work productively in teams while using cultural global competence.

NJSLS-Career Readiness, Life Literacies,and Key Skills:Standards & Disciplinary Concepts (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Career Awareness, Exploration and Preparation Standards)

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https://www.nj.gov/education/standards/clicks/index.shtml or
https://www.nj.gov/education/standards/clicks/Docs/2020NJSLS-CLKS.pdf (Pgs 15-16)

Two or three Career Readiness, Life Literacies, and Key Skills Practices standards should be left in each unit, the rest should be removed from the list below.

CLKS Practices:

1. Act as a responsible and contributing community members and employee
   4. Demonstrate creativity and innovation
   5. Utilize critical thinking to make sense of problems and persevere in solving them
   9. Work productively in teams while using cultural/global competence

Explanation of how **CLKS Practices** connect to the unit:

Students will use problem solving skills to design their model, working together in teams, using creativity to improve their project.

9.2 standards

Explanation of how 9.2 standards connect to the unit:

Interdisciplinary Standards

- **6.1.2.CivicsPD.1:** Engage in discussions effectively by asking questions, considering facts, listening to the ideas of others, and sharing opinions.
- **6.1.2.CivicsPD.2:** Establish a process for how individuals can effectively work together to make decisions.

Explanation of how interdisciplinary standards connect to the unit:
Students will listen to one another and work together in groups to create their own version of their cars.

Technology Integration (9.4 Standards)

9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems. •
9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).

Explanation of how 9.4 standards connect to the unit:
Students will conduct brainstorming sessions on what design features will help build the bridge. Failure of the bridge to hold enough will also be discussed, and reflection and discussion will occur based on the students findings.

Stage 2- Assessment Evidence:	
Assessment:	
Formative	**Informal assessment through questioning, exit tickets, health and wellness journal, student reflections**
Summative	**Student portfolios, end of unit project based on journal entries, Kahoot, Quizlet, presentations**
Alternative	**Slideshow, poster, oral presentation**
Benchmark	**Questionnaire, survey**
Other	**Informal assessment through questioning, exit tickets, sketch book journal, student reflections**

Stage 3 - Learning Plan	
Learning Activities:	**ELL:**

• Learn about different types of bridges • Sketch out a prototype • Brainstorm what materials you will need • Build bridge with paper • Test how much weight a bridge can support by adding pennies to the bridge • Discuss what worked and didn't work about the design	• Extend time requirements • Preferential seating • Check often for understanding • Oral/visual directions/prompts when needed • Provide hands-on materials and/ manipulatives for students to practice using new content knowledge
	G&T: • Allow students to take an active role in teaching content to other students in the school • Propose interest-based extension activities for early finishers
	Special Ed: • Utilize a multi-sensory approach during instruction • Modify test content and/or format • Preferential seating as needed
	504: • Review, restate and repeat • Provide notes • Chunk assignments
	Students at Risk: • Deliver instruction utilizing varied learning styles including audio, visual and tactile/kinesthetic • Provide individual instruction as needed • Meet with students frequently to ensure understanding • Allow verbal rather than written responses

Core Instructional Resources

Teacher Pedagogical Resources: *What skills/strategies, and resources helped the teacher*

design this unit

Student Materials: *What materials are provided to students during this unit. (core texts, websites, etc.)*

***All materials must list a Lexile Level (https://hub.lexile.com/find-a-book/search)*

Notes:

Course:Technology & Design

Google Tools: Unit 4

Grade Level(s): 4	**Length of Unit: 8 weeks**

Unit Rationale:
With increasing forms of technology available for students to enhance their learning environment, students will be introduced to a powerful new way to solve problems, individually, or collectively, by collaborating within google documents. Students will learn new ways to create documents using word processing, as students will increase productivity and creativity by publishing and share their work.

Stage 1 - Desired Results

Understandings:

Students will understand that…

- *Google Slides is an effective and efficient way to publish work.*
- *Creating professional looking documents enhances the communication of information.*
- *Collaborating with other members promotes efficiency and ensures accuracy*

Essential Questions:

- - What types of documents can I create within Google Drive?
- - How do I create these files?
- - How will formatting documents in an attractive way enhance the communication of information?
- - Why would you want to collaborate with others on a Google Document?

Content:

Students will know…

- create professional documents using features of a Google Documents.
- Students will create and edit a document.
- Students will use the sharing features of Google Documents to collaborate, comment, and provide positive feedback with other students.
-

Skills:

Students will be able to…

- - - Identify the many uses of Google Documents.
- - Identify the major components of the word processing window.
- - Create, rename, save, close, open and print a document.
- - Format text.
- - Insert an image into a document.
- - Use the drawing tools.
- - Create a bulleted and numbered list.
- - Share a document with a teacher/student.
- Add custom animations
- Add slide transitions

NJ Student Learning Standards -

8.1.2.A.2 Create a document using a word processing application.
8.1.2.D.1 Develop an understanding of ownership of print and nonprint information.
8.1.5.D.1 Understand the need for and use of copyrights.
8.1.5.D.2 Analyze the resource citations in online materials for proper use.

21st Century College & Career Practice Standards

CRP2. Apply appropriate academic and technical skills
CRP6. Demonstrate creativity and innovation.

CRP11. Use technology to enhance productivity
CRP7. Employ valid and reliable research strategies.

NJSLS-Career Readiness, Life Literacies,and Key Skills:Standards & Disciplinary Concepts (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Career Awareness, Exploration and Preparation Standards)

CLKS Practices:

1. Act as a responsible and contributing community members and employee
   4. Demonstrate creativity and innovation
   8. Use technology to enhance productivity increase collaboration and communicate effectively
   9. Work productively in teams while using cultural/global competence

Explanation of how **CLKS Practices** connect to the unit:
Students will understand the accountability of using the chromebooks, as a way to think innovatively and creatively. They will also learn how to use technology to increase collaboration and communicate effectively.

9.2 standards

Explanation of how 9.2 standards connect to the unit:
Students will learn how to use digital tools as a way to produce writing and publishing.

Interdisciplinary Standards

W.K.6 With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.
NJSLSA.W6 Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

Explanation of how interdisciplinary standards connect to the unit:
Students will explore a variety of digital tools and collaborate with their peers.

Technology Integration (9.4 Standards)

9.4.5.TL.3: Format a document using a word processing application to enhance text, change page formatting, and include appropriate images graphics, or symbols.
• 9.4.5.TL.5: Collaborate digitally to produce an artifact (e.g., 1.2.5CR1d).

Explanation of how 9.4 standards connect to the unit:
Students will use Google Slides doc to create a document, including images, symbols and

share with each other and work together.

Stage 2- Assessment Evidence:	
Assessment:	
Formative	**Informal assessment through questioning, exit tickets, health and wellness journal, student reflections**
Summative	**Student portfolios, end of unit project based on journal entries, Kahoot, Quizlet, presentations**
Alternative	**Slideshow, poster, oral presentation**
Benchmark	**Questionnaire, survey**
Other	**Informal assessment through questioning, exit tickets, sketch book journal, student reflections**

Stage 3 - Learning Plan	
Learning Activities: ● Create a Google Doc ● Share Google Doc ● Create a Google Slide ● Share Google Slide ● Add slide show effects/animations	**ELL:** ● Extend time requirements ● Preferential seating ● Check often for understanding ● Oral/visual directions/prompts when needed ● Provide hands-on materials and/ manipulatives for students to practice using new content knowledge
	G&T: ● Allow students to take an active role in teaching content to other students in the school ● Propose interest-based extension activities for early finishers
	Special Ed: ● Utilize a multi-sensory approach during instruction ● Modify test content and/or format ● Preferential seating as needed

	504: • Review, restate and repeat • Provide notes • Chunk assignments
	Students at Risk: • Deliver instruction utilizing varied learning styles including audio, visual and tactile/kinesthetic • Provide individual instruction as needed • Meet with students frequently to ensure understanding • Allow verbal rather than written responses

Core Instructional Resources

Teacher Pedagogical Resources: *What skills/strategies, and resources helped the teacher design this unit*

Student Materials: *What materials are provided to students during this unit. (core texts, websites, etc.)*

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Notes:

Course:Technology & Design

Design Challenge: Unit #5

Grade Level(s): 3	**Length of Unit: 3 weeks**

Unit Rationale:
Students participating in the Design Challenges will be challenged to use technological design and problem solving methods to develop their inventions and ideas, while utilizing presentation skills. In this particular unit, students will be developing and designing a backpack that is unique and appealing to customers. Students will take their ideas from a sketch phase all the way to a prototype phase, and present their product to a marketing team for critiquing.

Stage 1 - Desired Results

Understandings:

Students will understand that…

- *technological design and problem solving methods will help develop their ideas.*
- *they will be creative designers working for a company that produces backpacks.*
- *measurements in their design patterns will be key to estimate how much it would cost to create one backpack.*
- *some materials used are more efficient than others when designing a backpack*

Essential Questions:

- How are the technological design and problems solving methods applied to the development of your product?
- Why is economic interdependence a function of geography?
- What changes occurred in the overall development of your product, from start to finish?
- What are specific constraints when making a backpack? i.e. size, weight, materials What is the average weight of a 3rd grade backpack brought to school? What uses could you have for backpack? What kinds of materials will this back pack hold?
- What makes canvas a good material for backpacks?
-

Content:

Students will know…

- *how to sketch an initial draft of their backpack*
- *how to apply the design and problem solving method to their project.*
- *understand that volume, weight, and materials all are*

Skills:

Students will be able to…

- -

determining factors in designing a product	

NJ Student Learning Standards -

8.2.5.C.1 Collaborate with peers to illustrate components of a designed system.
8.2.5.C.2 Explain how specifications and limitations can be used to direct a product's development.
8.2.5.C.3 Research how design modifications have lead to new products.
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.5 Explain the functions of a system and subsystems.
8.2.5.C.6 Examine a malfunctioning tool and identify the process to troubleshoot and present options to repair the tool.
8.2.5.C.7 Work with peers to redesign an existing product for a different purpose.

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.

21st Century College & Career Practice Standards

CRP2. Apply appropriate academic and technical skills
CRP4. Communicate clearly and effectively and with reason
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP6. Demonstrate creativity and innovation.
CRP9. Model integrity, ethical leadership and effective management.
CRP11. Use technology to enhance productivity
CRP12. Work productively in teams while using cultural global competence.

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Two or three Career Readiness, Life Literacies, and Key Skills Practices standards should be left in each unit, the rest should be removed from the list below.

CLKS Practices:

1. Act as a responsible and contributing community members and employee
   4. Demonstrate creativity and innovation

5. Utilize critical thinking to make sense of problems and persevere in solving them
9. Work productively in teams while using cultural/global competence

Explanation of how **CLKS Practices** connect to the unit:
Students will work together in teams using creativity and innovation to design and build their backpack, using critical thinking to solve the problem.

9.2 standards

Explanation of how 9.2 standards connect to the unit:

Interdisciplinary Standards

MP.2 Reason abstractly and quantitatively.

Explanation of how interdisciplinary standards connect to the unit:
Numeracy connects mathematics with situations that require capabilities such as problem solving, critical judgment, and sense-making related to non-mathematical contexts.

Technology Integration (9.4 Standards) -

9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).

• 9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6).

Explanation of how 9.4 standards connect to the unit:
Through the use of technology, students will brainstorm how their product is made through the design process, and within their project will identify the role of failure as part of the creative process. Students will work in teams to create their design using recyclables and understanding the environmental impact of their project, and along the way demonstrate creativity and innovation, through critical thinking and problem solving.

Stage 2- Assessment Evidence:

Assessment:

Formative	**Informal assessment through questioning, exit tickets, health and wellness journal, student reflections**
Summative	**Student portfolios, end of unit project based on journal entries, Kahoot, Quizlet, presentations**
Alternative	**Slideshow, poster, oral presentation**
Benchmark	**Questionnaire, survey**
Other	**Informal assessment through questioning, exit tickets, sketch book journal, student reflections**

Stage 3 - Learning Plan	
Learning Activities: ● Research backpacks ● Print and sketch out a prototype ● Brainstorm what materials you will need ● Build project initially with cardboard and tape and recyclables to give it stability and strength that resembles the original model ● Review the strength of the project by testing what it can support and hold ● Create a poster detailing the project ● Present your project to small and large groups	**ELL:** ● Extend time requirements ● Preferential seating ● Check often for understanding ● Oral/visual directions/prompts when needed ● Provide hands-on materials and/ manipulatives for students to practice using new content knowledge
	G&T: ● Allow students to take an active role in teaching content to other students in the school ● Propose interest-based extension activities for early finishers
	Special Ed: ● Utilize a multi-sensory approach during instruction ● Modify test content and/or format ● Preferential seating as needed
	504: ● Review, restate and repeat ● Provide notes ● Chunk assignments

	Students at Risk: • Deliver instruction utilizing varied learning styles including audio, visual and tactile/kinesthetic • Provide individual instruction as needed • Meet with students frequently to ensure understanding • Allow verbal rather than written responses

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Notes:

Course:Technology & Design

Cyber Safety Posters: Unit 6

Grade Level(s): 3	**Length of Unit: 3 weeks**

Unit Rationale:
Desktop publishing enhances visual communication and streamlines the process of disseminating information of all kinds. Desktop publishing is important as a tool that can enhance communication by making it possible to quickly and efficiently produce printed and electronic (online or on-screen) documents. Making this poster in groups and using the common theme of cyber safety will open up discussions as to safe online practice.

Stage 1 - Desired Results

Understandings:

Students will understand that…

- *Desktop publishing is specialized software to create documents for desktop or commercial printing.*
- *Desktop publishing enhances visual communication of information.*
- *Being safe online and following the rules supports good learning habits*

Essential Questions:

- - What kind of documents can I create using a desktop publishing program?
- - How do I create a publication?
- - How does formatting documents help enhance the communication of information presented?
- What does it mean to have a digital footprint?
- How should we behave online?

Content:

Students will know…

- - Students will use desktop publishing software to create professional looking documents such as newsletters, brochures, books, and other publications.
- - Students will use create templates in order to save time.
- - Students will understand when it is appropriate to use a desktop publishing software as opposed to word processing software.
- - Students will create documents that enhance a positive school culture.

Skills:

Students will be able to…

- -- Identify major components of the desktop publishing window.
- - Identify and define desktop publishing terminology.
- - Create a publication using a wizard.
- - Create an original publication focused on promoting a positive school culture.
- - Insert and edit graphics.

NJ Student Learning Standards -

8.1.2.A.2 Create a document using a word processing application.

21st Century College & Career Practice Standards

CRP2. Apply appropriate academic and technical skills
CRP6. Demonstrate creativity and innovation.

CRP11. Use technology to enhance productivity

NJSLS-Career Readiness, Life Literacies,and Key Skills:Standards & Disciplinary Concepts (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Career Awareness, Exploration and Preparation Standards)

Career readiness, life literacies, and key skills education *provides students with the necessary skills to make informed career and financial decisions, engage as responsible community members in a digital society, and to successfully meet the challenges and opportunities in an interconnected global economy.*
https://www.nj.gov/education/standards/clicks/index.shtml or
https://www.nj.gov/education/standards/clicks/Docs/2020NJSLS-CLKS.pdf (Pgs 15-16)

Two or three Career Readiness, Life Literacies, and Key Skills Practices standards should be left in each unit, the rest should be removed from the list below.

CLKS Practices:

1. Act as a responsible and contributing community members and employee
   4. Demonstrate creativity and innovation
   8. Use technology to enhance productivity increase collaboration and communicate effectively
   9. Work productively in teams while using cultural/global competence

Explanation of how **CLKS Practices** connect to the unit:
Students will create a digital poster, collaborating as a team within a shared Google document and within that story will demonstrate creativity. Students will work in teams to create this document.

9.2 standards
9.4.5.TL.3: Format a document using a word processing application to enhance text, change page formatting, and include appropriate images graphics, or symbols.
• 9.4.5.TL.5: Collaborate digitally to produce an artifact (e.g., 1.2.5CR1d).

Explanation of how 9.2 standards connect to the unit:
Students will use Google Slides doc to create a document, including images, symbols and share with each other and work together.

Interdisciplinary Standards

Pick a subject area that is not Math and find standards from the same grade level or grade band that connect to this work. At minimum two standards must be included (only one could be ELA)

Explanation of how interdisciplinary standards connect to the unit:

Technology Integration (9.4 Standards) -
9.4.5.TL.3: Format a document using a word processing application to enhance text, change page formatting, and include appropriate images graphics, or symbols.
• 9.4.5.TL.5: Collaborate digitally to produce an artifact (e.g., 1.2.5CR1d).

Explanation of how 9.4 standards connect to the unit:
Students will use Google Slides doc to create a document, including images, symbols and share with each other and work together.

Stage 2- Assessment Evidence:	
Assessment:	
Formative	*Exit tickets, oral and written responses*
Summative	*End of unit completed projects*
Alternative	*Meetings with student groups*
Benchmark	
Other	*Poster Presentation*

Stage 3 - Learning Plan	
Learning Activities: ● Discuss cyber safety ● Brainstorm and research important cyber safety components to include in poster theme ● Design Poster ●	**ELL:** ● Extend time requirements ● Preferential seating ● Check often for understanding ● Oral/visual directions/prompts when needed ● Provide hands-on materials and/ manipulatives for students to practice using new content knowledge
	G&T: ● Allow students to take an active role in teaching content to other students in the school ● Propose interest-based extension activities for early finishers

	Special Ed: • Utilize a multi-sensory approach during instruction • Modify test content and/or format • Preferential seating as needed
	504: • Review, restate and repeat • Provide notes • Chunk assignments
	Students at Risk: • Deliver instruction utilizing varied learning styles including audio, visual and tactile/kinesthetic • Provide individual instruction as needed • Meet with students frequently to ensure understanding • Allow verbal rather than written responses

Core Instructional Resources

Teacher Pedagogical Resources: *What skills/strategies, and resources helped the teacher design this unit*

Student Materials: *What materials are provided to students during this unit. (core texts, websites, etc.)*

***All materials must list a Lexile Level (https://hub.lexile.com/find-a-book/search)*

Notes:

Course:Technology & Design

Coding: Unit 7

Grade Level(s): 3	**Length of Unit: 3 weeks**

Unit Rationale:
In the growing world of technology, there are increasingly more ways to create and design applications and programs, in very kid friendly ways. Students will need to understand that there are easy ways to program on the computer, to create projects. Learning to code can open a world of possibilities for students, including the avenue to create video games, apps, and websites. In this introduction to programming, students will learn basics that they can continue from home on the websites www.code.org, and www.scratch.mit.edu

Stage 1 - Desired Results

Understandings:

Students will understand that…

- *Understand the importance of coding in our world today.*
- *Discover how to complete simple coding tasks.*
- *Use online tools to solve multiple problems.*
- *Computer programming impacts our everyday lives.*

Essential Questions:

- -
- - What is code?
- - Why is important to learn how to code?
- - What can you create from code?
- How do computers process data?
- What is block language?
- What is a loop? Event? Procedures? memory? storage? processing? software? coding? procedure? data?
- What is input/output?
- How does computer programming impact our everyday lives?
- What is an algorithm?

Content:

Students will know…

- learn simple coding basics.
- log onto the website www.code.org
- create a simple code action.

Skills:

Students will be able to…
- create a simple code action
- log onto www.code.org
- create algorithms to solve simple code problems

NJ Student Learning Standards -

8.2.5.E.1 Identify how computer programming impacts our everyday lives.
8.2.5.E.2 Demonstrate an understanding of how a computer takes input of data, processes and stores the data through a series of commands, and outputs information.
8.2.5.E.3 Using a simple, visual programming language, create a program using loops, events and procedures to generate specific output.

8.2.5.E.4 Use appropriate terms in conversation (e.g., algorithm, program, debug, loop, events, procedures, memory, storage, processing, software, coding, procedure, and data).

21st Century College & Career Practice Standards

CRP2. Apply appropriate academic and technical skills

CRP6. Demonstrate creativity and innovation.

CRP11. Use technology to enhance productivity

NJSLS-Career Readiness, Life Literacies,and Key Skills:Standards & Disciplinary Concepts (Career Readiness, Life Literacies, and Key Skills Practices and 9.2 Career Awareness, Exploration and Preparation Standards)

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https://www.nj.gov/education/standards/clicks/index.shtml or
https://www.nj.gov/education/standards/clicks/Docs/2020NJSLS-CLKS.pdf (Pgs 15-16)

Two or three Career Readiness, Life Literacies, and Key Skills Practices standards should be left in each unit, the rest should be removed from the list below.

CLKS Practices:

4. Demonstrate creativity and innovation
5. Utilize critical thinking to make sense of problems and persevere in solving them
8. se technology to enhance productivity increase collaboration and communicate effectively
9. Work productively in teams while using cultural/global competence

Explanation of how **CLKS Practices** connect to the unit:
Within this coding unit, students will use creativity and innovation, critical thinking and technology to help aid them in solving algorithms. Students will also work in teams to help each other, and understand that code is a worldwide activity and can be written in different languages, and can be learned in a variety of languages.

9.2 standards
• 9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.
• 9.2.5.CAP.2: Identify how you might like to earn an income.
• 9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
• 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these

requirements.

Explanation of how 9.2 standards connect to the unit:

Becoming a programmer is a lot of hard work, and specific requirements, which students will explore in discussions.

Interdisciplinary Standards
MP.2. Reason abstractly and quantitatively.

Explanation of how interdisciplinary standards connect to the unit:
Numeracy connects mathematics with situations that require capabilities such as problem solving, critical judgment, and sense-making related to non-mathematical contexts.

Technology Integration (9.4 Standards) -
• 9.4.5.TL.1: Compare the common uses of at least two different digital tools and identify the advantages and disadvantages of using each. • 9.4.5.TL.2: Sort and filter data in a spreadsheet • 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Explanation of how 9.4 standards connect to the unit:

Students will try a couple different coding activities and see the different types of programming languages there are out there, and what the advantages and disadvantages may be to using different coding platforms, and brainstorm how these tools may be used to solve problems.

Stage 2- Assessment Evidence:

Assessment:

Formative	*Exit tickets, oral and written responses*
Summative	End of unit coding tasks completed
Alternative	*One on One individual work with student*
Benchmark	*Each coding class has levels to complete*
Other	*Diagnostic, Projects, etc.*

Stage 3 - Learning Plan

Learning Activities: ● Participate in code.org hour of code activities.	**ELL:** ● Extend time requirements

	• Preferential seating • Check often for understanding • Oral/visual directions/prompts when needed • Provide hands-on materials and/ manipulatives for students to practice using new content knowledge
	G&T: • Allow students to take an active role in teaching content to other students in the school • Propose interest-based extension activities for early finishers
	Special Ed: • Utilize a multi-sensory approach during instruction • Modify test content and/or format • Preferential seating as needed
	504: • Review, restate and repeat • Provide notes • Chunk assignments
	Students at Risk: • Deliver instruction utilizing varied learning styles including audio, visual and tactile/kinesthetic • Provide individual instruction as needed • Meet with students frequently to ensure understanding • Allow verbal rather than written responses

Core Instructional Resources

Teacher Pedagogical Resources: *What skills/strategies, and resources helped the teacher design this unit*

Student Materials: *code.org*

***All materials must list a Lexile Level (https://hub.lexile.com/find-a-book/search)*

Notes:

Course:Technology & Design

Digital Storytelling: Unit 8

Grade Level(s): 3	**Length of Unit: 3 weeks**

Unit Rationale:
Digital storytelling is a fantastic way for students to be creative with their words, and share their ideas through stories. With the growing amount of available tools, students can collaborate and give feedback in more ways than they were ever able to before. Students will collaborate on stories together, sharing their ideas through a variety of platforms, working together to create a finished product.

Stage 1 - Desired Results

Understandings:

Students will understand that…

- *Digital tools provide opportunities for people to have new experiences, recognize problems, design solutions, and express their ideas.*
- *Producing a media rich story is an effective way to communicate ideas and enhance the storytelling experience.*
- *Students will demonstrate effective inputting of text.*

Essential Questions:

- - How can digital tools help enhance storytelling?
- - What are different ways to share a story with one another?
- - Can you apply your typing skills to a digital format, by creating a story?
- - How can digital tools be used for creating original and innovative works, ideas, and solutions?

Content:

Students will know…

- produce a media rich story, based on first person interviews about a significant local event or issue.
- share the document and receive feedback from their classmates.

Skills:

Students will be able to…

- - · create a document
- · conduct an interview
- · include uploaded visual image
- · demonstrate effective typing skills
- share the document and give feedback

NJ Student Learning Standards -

8.1.2.A.2 Create a document using a word processing application.

8.1.2.B.1 Illustrate and communicate original ideas and stories using multiple digital tools and resources.

21st Century College & Career Practice Standards

CRP2. Apply appropriate academic and technical skills

CRP6. Demonstrate creativity and innovation.

CRP11. Use technology to enhance productivity

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https://www.nj.gov/education/standards/clicks/index.shtml or
https://www.nj.gov/education/standards/clicks/Docs/2020NJSLS-CLKS.pdf (Pgs 15-16)

Two or three Career Readiness, Life Literacies, and Key Skills Practices standards should be left in each unit, the rest should be removed from the list below.

CLKS Practices:

4. Demonstrate creativity and innovation
8. Use technology to enhance productivity increase collaboration and communicate effectively
9. Work productively in teams while using cultural/global competence

Explanation of how **CLKS Practices** connect to the unit:
Students will create a story, collaborating as a team within a shared Google document and within that story will demonstrate creativity. Students will be chosen as editors, and photographers and writers, given various responsibilities when writing their article, and encouraged to work productively.

9.2 standards

Explanation of how 9.2 standards connect to the unit:

Interdisciplinary Standards

W.K.6 With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.
NJSLSA.W6 Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

Explanation of how interdisciplinary standards connect to the unit:
Use internet and digital tools

Technology Integration (9.4 Standards) -
9.4.5.TL.3: Format a document using a word processing application to enhance text, change page formatting, and include appropriate images graphics, or symbols.
• 9.4.5.TL.5: Collaborate digitally to produce an artifact (e.g., 1.2.5CR1d).

Explanation of how 9.4 standards connect to the unit:
Students will use Google Slides doc to create a document, including images, symbols and share with each other and work together.

Stage 2- Assessment Evidence:	
Assessment:	
Formative	*Exit tickets, oral and written responses*
Summative	*End of unit completed piece*
Alternative	*Meetings with student groups*
Benchmark	*Checkpoints for project completion*
Other	*Presentation*

Stage 3 - Learning Plan	
Learning Activities: ● Write an online story using storybirds program	**ELL:** ● Extend time requirements ● Preferential seating ● Check often for understanding ● Oral/visual directions/prompts when needed ● Provide hands-on materials and/ manipulatives for students to practice using new content knowledge
	G&T: ● Allow students to take an active role in teaching content to other students in the school ● Propose interest-based extension activities for early finishers

	Special Ed: • Utilize a multi-sensory approach during instruction • Modify test content and/or format • Preferential seating as needed
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Notes:

Course:Technology & Design

Research Project: Unit 9

Grade Level(s): 3	**Length of Unit: 4 weeks**

Unit Rationale:
Using the computer as a researching tool has quickly become the easiest way for students to learn information quickly about a topic they are interested in. Starting at an early age, it is imperative that students recognize that the information they research is not their own, and it must be credited, and not copied, or else this constitutes plagiarism. Students will be researching a topic of interest, creating an illustration, and document. Some examples of topics include animal, countries, food, plants/trees/ bugs, space, airplanes, inventions

Stage 1 - Desired Results

Understandings:

Students will understand that…

- *the computer can be used as a researching tool*
- *presentations can help enhance learning about a topic and make it really exciting to learn about.*

Essential Questions:

- -Who has the rights or credit to the information?
- How do we give them credit?
- How can computers help enhance learning about a topic?

Content:

Students will know…

- *how to save a file in their f: drive or google drive*
- *how to create a new project file*
- *how to research online about a topic*
-

Skills:

Students will be able to…

- - log onto computer
- print out information about their animal
- highlight and identify relevant information for their report
- create a paint document and illustrate their research topic
- create a publisher file
- with assistance, copy and paste illustration into publisher document
- create WordArt for their title
- input important information regarding their topic into the file.
-

NJ Student Learning Standards -
8.1.2.A.2 Create a document using a word processing application.

8.1.2.D.1 Develop an understanding of ownership of print and nonprint information.

8.1.5.D.1 Understand the need for and use of copyrights.

8.1.5.D.2 Analyze the resource citations in online materials for proper use.

21st Century College & Career Practice Standards

CRP7. Employ valid and reliable research strategies.

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Explanation of how **CLKS Practices** connect to the unit:
Students will research, collaborating as a team within a shared Google slideshow and demonstrate creativity. Students will be chosen as editors, and photographers and writers, given various responsibilities when writing their article, and encouraged to work productively.

9.2 standards should be listed <u>when appropriate</u>. The <u>appropriate grade band</u> must be used for these standards.

https://www.nj.gov/education/standards/clicks/Docs/2020NJSLS-9.2CareerAwareness.pdf (Starts on pg.37)

Explanation of how 9.2 standards connect to the unit:

W.K.6 With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.
NJSLSA.W6 Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

Explanation of how interdisciplinary standards connect to the unit:
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Explanation of how 9.4 standards connect to the unit:
Students will use Google Slides doc to create a document, including images, symbols and share with each other and work together.

Stage 2- Assessment Evidence:

Assessment:

Formative	*Exit tickets, oral and written responses*
Summative	*End of unit completed projects*
Alternative	*Meetings with student groups*
Benchmark	*Checkpoints for project completion*
Other	*Presentation*

Stage 3 - Learning Plan

Learning Activities:
- (please bullet)

Trajectory of how you are bringing students to develop the understandings listed above

ELL:

- Extend time requirements
- Preferential seating
- Check often for understanding
- Oral/visual directions/prompts when

	needed ● Provide hands-on materials and/ manipulatives for students to practice using new content knowledge
	G&T: ● Allow students to take an active role in teaching content to other students in the school ● Propose interest-based extension activities for early finishers
	Special Ed: ● Utilize a multi-sensory approach during instruction ● Modify test content and/or format ● Preferential seating as needed
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