

Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

SPARTAN MISSION:

Meeting the needs of all students with a proud tradition of academic excellence.

Curriculum Development Timeline

School: Township of Ocean Intermediate School

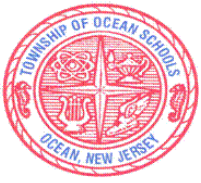
Course: Digital Design, Grade 8

Department: Applied Technology

Board Approval	Supervisor	Notes
August 2018	Patrick O'Neill	Born Date
August 2019	Patrick O'Neill	Revisions

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Pacing Guide	
Week	Marking Period 1
1	Computer Science History
2	Computer Science History
3	Animated GIF
4	Adobe Illustrator
5	Adobe Illustrator
6	Adobe Illustrator
7	Adobe Illustrator
8	Adobe Illustrator
9	Adobe Illustrator
10	Adobe Illustrator
Week	Marking Period 2
11	Adobe Illustrator
12	Adobe Illustrator
13	Coding
14	Coding
15	Coding
16	Digital Music with Audacity
17	Digital Music with Audacity
18	Digital Music with Audacity

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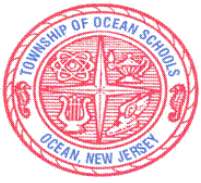
19	Digital Music with Audacity
20	Digital Music with Audacity

Core Instructional & Supplemental Materials including various levels of Texts

Microsoft PowerPoint, Internet, Brainpop.com, Crash Course Computer Science Videos, YouTube Videos, gifmaker.me, Adobe Illustrator, Notepad, w3schools.com, color-hex.com, Audacity, Soundbible.com

Time Frame	2 Weeks
Topic	
Computer Science History	
Essential Questions	
<ul style="list-style-type: none"> ● What is a computer? ● When was the original computer invented and for what purpose? ● What is Computer Memory? How is it measured? ● What is a Computer Network? ● What is the design process? ● What is a Vector Shape/Raster File? ● What is the difference between a GIF, JPEG, and PNG? ● How does color impact design and human response? 	
Enduring Understandings	
<ul style="list-style-type: none"> ● Computational Devices have come a long way since being invented. What has changed over time, what remains the same, why? ● Why is there a need for computational devices? ● How do Graphic Design components impact the creative process on a computer? 	

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Alignment to Standards

- [\(8.1.8.D.3\) Demonstrate an understanding of fair use and Creative Commons intellectual property.](#)
- [\(8.2.8.B.CS1\) - The cultural, social, economic and political effects of technology.](#)
- [\(8.2.8.B.1\) - Evaluate the history and impact of sustainability on the development of a designed product or system over time and present results to peers](#)
- [\(8.1.8.A.CS1\) - Understand and use technology systems.](#)
- [\(8.2.8.E.1\) Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used.](#)
- [\(8.2.8.E.2\) Demonstrate an understanding of the relationship between hardware and software.](#)
- [\(8.2.8.B.CS4\) - The influence of technology on history.](#)
- [\(8.2.8.E.4\) Use appropriate terms in conversation \(e.g., programming, language, data, RAM, ROM, Boolean logic terms.\)](#)

Learning Activities & Key Concepts and Skills

- Discuss the invention of the computer and its impact on modern society.
- In what ways can file extension type such as Vector (.AI) or Raster (.JPEG, .GIF, .PNG) alter the appearance of digital art.
- What are the advantages or disadvantages of using Vectors.
- Show ways color can change the meaning or impact of a piece of digital art.
- Identity need for technology, computers, and networks.
- Research and analyze examples of color theory found in today's world.

Assessments

Formative:

- Observational Assessments will be made. Digital notes submitted to the instructor at the end of the unit.

Summative:

- Computer Science/Computational Device Quiz

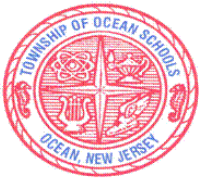
Benchmark:

- Benchmark Test will be taken prior to beginning Unit, then retaken at the conclusion of the semester.

Alternative:

- Knowledge gained will lead to graded projects using Rubrics.

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Career Education

CRP2. Apply appropriate academic and technical skills.
CRP5. Consider the environmental, social and economic impacts of decisions.
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.

21st Century Skills

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.
9.1.8.F.2 - Examine the implications of legal and ethical behaviors when making financial decisions

Interdisciplinary Connections

Science

SCI.7-8.5.1.8.A.c - Students will include computational devices, inventions, how were these inventions were created in a discussion about what are the advantages or disadvantages of using Vectors.

Social Studies

8.2.8.B.CS4- Students will make connections to world history, a reason and or need for the invention of the computer and its impact on modern society.

Language Arts

LA.6-8.RH.6-8.4- Students will discuss specific computer terms and meanings. Includes computer language such as HTML javascript and boolean logic.

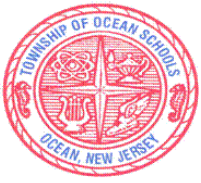
Technology Integration

8.1 Educational Technology- All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

- See Alignment to Standards Section Above.
- Students will use Adobe Suite, and Audacity to create animated GIFs, music posters,

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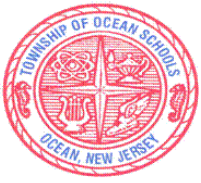
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and build a song of musical loops.

- Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

Time Frame	1 Week
Topic	
Animated GIF	
Essential Questions	
<ul style="list-style-type: none"> • What is a GIF, JPEG and PNG image? • What are the advantages/disadvantages of each? • Why are animated pictures usually in GIF format? • What is copyright infringement? How can this affect you in the real world as well as the classroom? 	
Enduring Understandings	
<ul style="list-style-type: none"> • Using someone else's copyrighted material can cause legal issues and have negative consequences. • Animation is really just a series of images played back at a particular speed. 	
Alignment to Standards	
<ul style="list-style-type: none"> • (8.1.8.D.2) Demonstrate the application of appropriate citations to digital content. • (8.1.8.D.3) Demonstrate an understanding of fair use and Creative Commons intellectual property. • (8.2.8.E.1) Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used. • (8.1.8.A.1) Demonstrate knowledge of a real world problem using digital tools. 	

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Learning Activities & Key Concepts and Skills

- Discuss copyright issues and how to avoid copyright infringement.
- Create a simple online animation from a streaming video source like YouTube.
- Discussion and comparison of multiple online picture formats.
- Discussion of appropriate video content will be discussed.
- Describe consequences for copyright infringement.
- Identify the term GIF.

Assessments

Formative:

- Observational Assessments will be made.

Summative:

- Animated GIF will be graded as a project

Alternative:

- Rubric will be used to determine final project grade.

Career Education

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.

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

21st Century Skills

9.2.8.B.6 - Demonstrate an understanding of the necessary preparation and legal requirements to enter the workforce.

Interdisciplinary Connections

Language Arts

LA.6-8.WHST.6-8.8- Terms like copyright and infringement will be introduced to students.

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Appropriate video content will be discussed.

Technology Integration

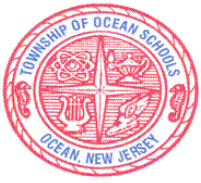
8.1 Educational Technology- All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

- See Alignment to Standards Section Above.
- Students will use Adobe Suite, and Audacity to create animated GIFs, music posters, and build a song of musical loops.
- Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

Time Frame	9 Weeks
Topic	
Adobe Illustrator	
Essential Questions	
<ul style="list-style-type: none">● What is a Vector Based Graphic? How does this compare to a Raster File?● What is a simple way to set up the desktop for simple, efficient and consistent Adobe Illustrator use.● Why are using layers so important when using Illustrator?● How can students use the correct tools such as the pen tool and direct selection tool to create modern digital art?● How can the pathfinder tool slice or take parts away from a Vector object?● What does my logo say about my business?	
Enduring Understandings	
<ul style="list-style-type: none">● Tracing an image is an essential part of Adobe Illustrator and will be used frequently during the semester.● Scaling an image will not change it's quality as long as it is a Vector object.● Live trace is a faster, but less accurate way to trace and vectorize an object.	

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- Logos are generally simple and to the point.

Alignment to Standards

- [\(8.1.8.D.2\) Demonstrate the application of appropriate citations to digital content.](#)
- [\(8.1.8.B.1\) Illustrate and communicate original ideas and stories using multiple digital tools and resources.](#)
- [\(8.2.8.E.1\) Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used.](#)
- [\(8.2.8.C.2\) Explain the need for the optimization in a design process.](#)
- [\(8.2.8.D.1\) Design and create a product that addresses a real world problem using a design process under specific constraints.](#)
- [\(8.1.8.A.1\) Demonstrate knowledge of a real world problem using digital tools.](#)
- [\(8.1.12.B.1\) Synthesize and publish information about a local or global issue or event \(ex. telecollaborative project, blog, school web\).](#)

Learning Activities & Key Concepts and Skills

- Discuss the differences between the selection tool vs the direct selection tool.
- Identify the Pathfinder window and how the Divide tool can be used to edit whole vector shapes.
- Create a music poster for the TOIS Fall chorus extravaganza.
- Create and present to the class a business or virtual mobile Application, including a logo and description, that will have a positive impact on society.
- Show ways color can change the meaning or impact of a piece of digital art.
- Discussion and comparison of multiple graphic formats and tools used to create them.
- Identify live trace and pathfinder windows in Adobe Illustrator.
- Collaborate with peers to address a real-world problem and solution.
- Create a virtual application, present your findings to the class.
- Practice interior design, engineering, and color theory with simple shapes.
- Enter a real-life poster contest with the winner pamphlet cover artwork published.

Assessments

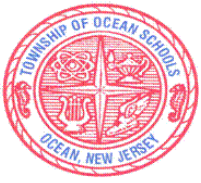
Formative:

- Observational Assessments will be made.

Summative:

- Projects will be handed in and graded based off of different rubrics.

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Alternative:

- Rubrics will be used to assess student work.

Career Education

CRP2. Apply appropriate academic and technical skills.
CRP3. Attend to personal health and financial well-being.
CRP4. Communicate clearly and effectively and with reason.
CRP5. Consider the environmental, social and economic impacts of decisions.
CRP6. Demonstrate creativity and innovation.
CRP7. Employ valid and reliable research strategies.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP9. Model integrity, ethical leadership and effective management.
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.

21st Century Skills

9.2.8.B.7 - Evaluate the impact of online activities and social media on employer decisions.
9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.
9.1.8.F.2 - Examine the implications of legal and ethical behaviors when making financial decisions

Interdisciplinary Connections

Language Arts

LA.6-8.WHST.6-8.6-7- Students will write biographical sketches of an individual who has impacted the world. Written sketches will become posters with the use of Adobe Illustrator.

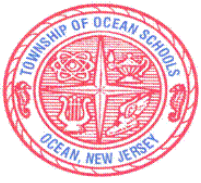
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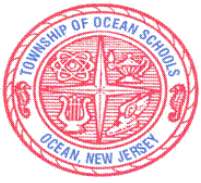
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Time Frame	3 Weeks
Topic	
Coding	
Essential Questions	
<ul style="list-style-type: none">• What is the Internet, and why was it invented?• What is coding? What are the basics/"Hello World"• What can coding do besides create websites?• What is HTML?• What is CSS?• How does coding affect me on a daily basis?	
Enduring Understandings	
<ul style="list-style-type: none">• Understanding coding goes way beyond simple website building. Web browsers, OS, phone apps, and even social media pages like facebook are made with code.	
Alignment to Standards	

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- [\(8.1.8.D.2\) Demonstrate the application of appropriate citations to digital content.](#)
- [\(8.2.8.E.1\) Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used.](#)
- [\(8.2.8.E.1\) Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used.](#)
- [\(8.2.8.B.CS2\) - The effects of technology on the environment.](#)
- [\(8.2.8.B.5\) - Identify new technologies resulting from the demands, values, and interests of individuals, businesses, industries and societies.](#)
- [\(8.2.8.C.3\) - Evaluate the function, value, and aesthetics of a technological product or system, from the perspective of the user and the producer.](#)

Learning Activities & Key Concepts and Skills

- Discuss and explore the coding languages of HTML and CSS.
- Discussion and comparison of coding essentials of w3schools.org and colorhex.com for customization of colors.
- Demonstrate how to create a simple webpage from scratch using simple word processing-based programs such as notepad.

Assessments

Formative:

- Observational Assessments will be made.

Summative:

- Website will be handed in and graded based on the rubric.

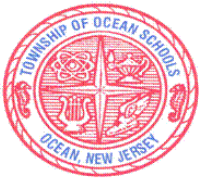
Alternative:

- Rubrics will be used to assess student work.

Career Education

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CRP6. Demonstrate creativity and innovation.
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21st Century Skills

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.

9.1.8.A.5 - Relate how the demand for certain skills determines an individual's earning power.

Interdisciplinary Connections

Language Arts

LA.6-8.RST.6-8.4- Students will learn a new language of HTML and CSS to create a simple webpage from scratch using simple word processing-based programs such as notepad.

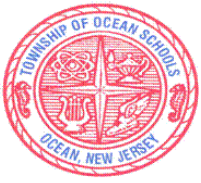
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Time Frame	5 Weeks
Topic	
Digital Music with Audacity	
Essential Questions	
<ul style="list-style-type: none">● What is music, can it be created without actual instruments?● What is a melody?	

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- What is looping?
- How can changing the key of a sound or note make it sound different?
- What is BPM, rhythm, song form (structure)?

Enduring Understandings

- New technological advances have been made that enables people with little or no musical experience to create songs from scratch.

Alignment to Standards

- [\(8.2.8.B.CS3\) - The role of society in the development and use of technology.](#)
- [\(8.2.8.B.5\) - Identify new technologies resulting from the demands, values, and interests of individuals, businesses, industries and societies.](#)
- [\(8.2.8.E.1\) Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used.](#)
- [\(8.2.8.C.2\) Explain the need for the optimization in a design process.](#)
- [\(8.2.8.E.1\) Identify ways computers are used that have had an impact across the range of human activity and within different careers where they are used.](#)

Learning Activities & Key Concepts and Skills

- Demonstrate how to manipulate layers and pitch of sound.
- Create an 8 second musical loop from sampulator.com with at least 10 layers.
- Build a song from scratch in Audacity using sounds from Soundbible.com that normally wouldn't be considered a musical instrument.
- Demonstrate an understanding of song structure, Beats Per Minute, and melody, and apply this to an original music composition.

Assessments

Formative:

- Observational Assessments will be made. Song progress will be listen to.

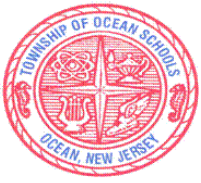
Summative:

- Song will be handed in and graded based on the rubric.

Alternative:

- Rubrics will be used to assess student work.

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21st Century Skills

- 9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.
- 9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.
- 9.1.8.A.5 - Relate how the demand for certain skills determines an individual's earning power.

Interdisciplinary Connections

Language Arts

LA.6-8.RST.6-8.4- Students will learn how BPM and pitch and key change can affect the structure of a song.

Technology Integration

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Modifications (ELL, Special Education, At-Risk Students, Gifted & Talented, & 504 Plans)

ELL:

- Work toward longer passages as skills in English increase
- Use visuals
- Introduce key vocabulary before lesson
- Teacher models reading aloud daily
- Provide peer tutoring
- Use of Bilingual Dictionary
- Guided notes and/or scaffold outline for written assignments
- Provide students with English Learner leveled readers.

Supports for Students With IEPs:

- Allow extra time to complete assignments or tests
- Guided notes and/or scaffold outline for written assignments
- Work in a small group
- Allow answers to be given orally or dictated
- Use large print books, Braille, or books on CD (digital text)
- Follow all IEP modifications

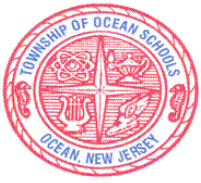
At-Risk Students:

- Guided notes and/or scaffold outline for written assignments
- Introduce key vocabulary before lesson
- Work in a small group
- Lesson taught again using a differentiated approach
- Allow answers to be given orally or dictated
- Use visuals / Anchor Charts
- Leveled texts according to ability

Gifted and Talented:

- Create an enhanced set of introductory activities (e.g. advance organizers, concept maps, concept puzzles)
- Provide options, alternatives and choices to differentiate and broaden the curriculum
- Organize and offer flexible small group learning activities
- Provide whole group enrichment explorations
- Teach cognitive and methodological skills

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- Use center, stations, or contracts
- Organize integrated problem-solving simulations
- Propose interest-based extension activities
- Expose students to beyond level texts.

Supports for Students With 504 Plans:

- Follow all the 504 plan modifications
- Text to speech/audio recorded selections
- Amplification system as needed
- Leveled texts according to ability
- Fine motor skill stations embedded in rotation as needed
- Modified or constrained spelling word lists
- Provide anchor charts with high frequency words and phonemic patterns

Common Misconceptions

The Computer's definition and purpose has changed greatly over the last few decades. Many students confuse the file extension GIF picture files with the Animated GIF. Picture file extension types such as JPEG, TIFF, and GIF will be explained. There is a substantially longer learning curve to Adobe Illustrator software than students are accustomed to. This software can be used to create amazing artwork.

Coding goes beyond website building. It is used to build everything electronic-based. Students have experience listening to music but not much practice creating their own. Using sound clips and loops, they will create an original music score keeping in mind Beats Per Minute, Pitch and Key signatures. This will help define what is considered music. The invention of the modern Computer helps us with our daily lives and jobs making us a more efficient species.

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