STEAM High School
Animation and Game Design Concentration:
Media Technology
Summary Overview

Concentration Overview

This concentration is designed to prepare students for entry level careers or further education and training in professions that use visual art, digital media, and Web-based tools and materials as the primary means of communication and expression. The program will support students as they learn to design and edit many forms of digital media. Students will develop skills in both visual art concepts as well as new and emerging digital processes in multiple types of media for multiple applications, including digital photography, digital image editing, graphic design, website design, video and audio production and post-production, 2D and 3D computer animation, and innovative video game design. Students will apply the fundamentals of design to create digital environments, and explore a range of media production principles in color manipulation, and audio and video editing. After working with multiple digital media applications, students will have the opportunity to focus their learning and specialize in a particular area of interest. In collaboration with students in the other STEAM concentrations, especially the Entertainment Engineering concentration, students will apply design and production techniques to create quality digital media projects that communicate complex concepts and address authentic questions in their community, Students will demonstrate clear and accurate communication skills, leadership and collaboration skills and an awareness of issues around diversity, professional ethics, and environmental responsibility. Students will also learn about cyber safety and be able to make informed decisions about their behaviors and the risks they take when using the internet and mobile technologies. Students will utilize the latest digital technology tools, such as Adobe Creative Cloud, Avid Pro Tools, Autodesk video and gaming software, gaming engines, and open-source software for multiple digital media applications. As they continue through the concentration, students will have the opportunity to earn micro credentials in digital applications, such as Adobe Certified Associate (ACA), App Development with Swift Certification, Avid Pro Tools Certifications, AWS Certified Cloud Practitioner, Certified Internet Web (CIW) Certifications, and Microsoft 365 Certifications to add to interactive digital portfolios of their work.

Additional Learning Opportunities

- **Micro-credentials:** Students may pursue learning experiences and credentials depending on the requirements of the project that they are involved in. Some examples for this concentration include, but are not limited to:
    - Adobe Certified Associate (ACA)
    - App Development with Swift Certification
    - Avid Pro Tools Certifications
    - AWS Certified Cloud Practitioner
    - Certified Internet Web (CIW) Certifications
    - IC3 Digital Literacy Certifications
    - Microsoft 365 Fundamentals Certification
    - Microsoft Office Specialist Associate (Office 365 and Office 2019)
    - Other relevant certifications as they become available through industry collaborations, teacher certifications and student interest.
- **Summer Bridge Enrichment:** Students will have the opportunity to participate in cross-curricular Summer Bridge programs to enhance and enrich their skills. Students will explore and create solutions that address authentic needs in the school and wider community with the involvement of local industry professionals. Students will build on skills learned during the school year to work collaboratively with students from other concentrations and programs.

Integrated High School Academics

TBD

Concurrent College Enrollment

TBD

Calendar for Animation and Game Design: Media Technology Concentration

Level 1 9th Grade			
1	**2**	**3**	**4**
What are the uses and impacts of media technology in society? Project #1: TBD	**What is the impact of emerging technology on design? Project #2: TBD**	**How do technology and design principles work together in digital design? Project #3: TBD**	**How do computer applications support the revision and evolution of digital design? Project #4: TBD**

• Introduction to Animation and Game Design: Media Technology
• Careers in Animation and Game Design: Media Technology
• Communication and Employability Skills
• Digital Literacy:
  ○ Safety
  ○ Basic Computer Skills
• Professional Ethics in Animation and Game Design: Media Technology
• Work-Based Learning: Career Coaching, Job Shadowing
	• Fundamental Principles of Design
	• Project Management in Animation and Game Design: Media Technology
	• Work-Based Learning: Career Coaching, Job Shadowing
		• Digital Literacy: Programming Basics
		• Getting Started with Digital Design
		• Work-Based Learning: Career Coaching, Job Shadowing
			• Digital Tools and Software: Digital Design and Publishing Software
			• Work-Based Learning: Career Coaching, Job Shadowing

Level 2 10th Grade			
1	**2**	**3**	**4**
Why are professional ethics important in the field of media technology? Project #1: TBD	**How does purpose affect visual design? Project #2: TBD**	**How is design determined by function? Project #3: TBD**	**How does feasibility affect both production and postproduction? Project #4: TBD**

• Careers in Animation and Game Design: Media Technology
• Communication and Employability Skills
• Professional Ethics in Animation and Game Design: Media Technology
• Project Management in Animation and Game Design: Media Technology
• Work-Based Learning: Career Coaching, Job Shadowing
	• Digital Tools and Software:
	  ○ Digital Photography
	  ○ Creating Digital Imagery and Visual Design
	• Work-Based Learning: Career Coaching, Job Shadowing
		• Digital Tools and Software: Introduction to Website Development
		• Work-Based Learning: Career Coaching, Job Shadowing
			• Digital Tools and Software: Introduction to Video and Audio Production and Postproduction
			• Work-Based Learning: Career Coaching, Job Shadowing

Level 3 11th Grade			
1	**2**	**3**	**4**
How do different areas of design combine to create something new? Project #1: TBD		**How are designs tested and evaluated? Project #2: TBD**	

• Career and Post-Secondary Education Research and Applications
• Communication and Employability Skills
• Professional Ethics in Animation and Game Design: Media Technology
• Project Management in Animation and Game Design: Media Technology
• Digital Tools and Software
  ○ Digital Imagery and Visual Design
  ○ Website Development
  ○ Video and Audio Production and Postproduction
• Work-Based Learning: Career Coaching, Job Shadowing
	• Digital Tools and Software: Introduction to 2D and 3D Animation
	• Work-Based Learning: Career Coaching, Job Shadowing
		• Digital Tools and Software: Introduction to Video Game Design
		• Work-Based Learning: Career Coaching, Job Shadowing
			• Digital Tools and Software: Bringing It into Focus
			• Work-Based Learning: Career Coaching, Job Shadowing

Level 4 12th Grade			
1	**2**	**3**	**4**
How will I achieve my career goals? Project #1: TBD		**How are successful designs created? Project #2: TBD**	
• Careers in Animation and Game Design: Media Technology • Communication and Employability Skills • Professional Ethics in Animation and Game Design: Media Technology • Project Management in Animation and Game Design: Media Technology • Digital Tools and Software: Focus Area • Work-Based Learning: Career Coaching, Job Shadowing	• Digital Tools and Software: Focus Area • Work-Based Learning: Internships	• Digital Tools and Software: Focus Area • Work-Based Learning: Career Coaching, Job Shadowing	• Digital Tools and Software: Focus Area • Work-Based Learning: Internships

1 STEAM High School
Animation and Game Design: Media Technology Concentration
Course Syllabus
Level 1

Concentration Overview

This concentration is designed to prepare students for entry level careers or further education and training in professions that use visual art, digital media, and Web-based tools and materials as the primary means of communication and expression. The program will support students as they learn to design and edit many forms of digital media. Students will develop skills in both visual art concepts as well as new and emerging digital processes in multiple types of media for multiple applications, including digital photography, digital image editing, graphic design, website design, video and audio production and post-production, 2D and 3D computer animation, and innovative video game design. Students will apply the fundamentals of design to create digital environments, and explore a range of media production principles in color manipulation, and audio and video editing. After working with multiple digital media applications, students will have the opportunity to focus their learning and specialize in a particular area of interest. In collaboration with students in the other STEAM concentrations, especially the Entertainment Engineering concentration, students will apply design and production techniques to create quality digital media projects that communicate complex concepts and address authentic questions in their community, Students will demonstrate clear and accurate communication skills, leadership and collaboration skills and an awareness of issues around diversity, professional ethics, and environmental responsibility. Students will also learn about cyber safety and be able to make informed decisions about their behaviors and the risks they take when using the internet and mobile technologies. Students will utilize the latest digital technology tools, such as Adobe Creative Cloud, Avid Pro Tools, Autodesk video and gaming software, gaming engines, and open-source software for multiple digital media applications. As they continue through the concentration, students will have the opportunity to earn micro credentials in digital applications, such as Adobe Certified Associate (ACA), App Development with Swift Certification, Avid Pro Tools Certifications, AWS Certified Cloud Practitioner, Certified Internet Web (CIW) Certifications, and Microsoft 365 Certifications to add to interactive digital portfolios of their work.

Course Description

This course will provide students with the basic knowledge and skills related to the Animation and Game Design: Media Technology industry and is intended to serve as a starting point for several focus areas in future coursework including digital imagery and graphics, video and audio production and postproduction, website development, 2D and 3D animation and game development. This foundation course introduces a variety of relevant and emerging technologies, tools, and applications in Animation and Game Design: Media Technology. Students will use elements of text, graphics, sound, video, and digital imaging in various formats to design and create multimedia, and web-based projects that address an authentic question. Students will learn about managing the production workflow including planning, production, and post production and the importance of collaboration and teamwork. Students will enhance their skills in reading, writing, computing, communication, and critical thinking and apply them to the Animation and Game Design: Media Technology environment. Students will explore career opportunities in the Animation and Game Design: Media Technology field and will create interactive digital portfolios of their work, including professional resumes.

All students will engage in project-based learning at a minimum of one project each quarter. Intrinsic to project-based learning is examining a driving question or identifying a problem by articulating what is already known, and what students need to know to answer the question. Students are guided to develop and execute a plan culminating in a presentation demonstrating their response to the initial question or problem. This process concludes with self-reflection regarding their learning. As such, learning happens during the process of completing a project and not solely as a final activity to demonstrate what has been learned. In this foundational level, projects will focus on self-assessment in using a variety of computer and digital technologies and creating a plan for continued growth. Projects focusing on learning and application of basic design concepts and use of digital tools to create a product and meet an authentic need will be key.

Work-Based Learning

All of the instruction for this course will be project-based where students will be developing, planning, executing and presenting authentic Animation and Game Design: Media Technology projects based on community needs. Students will be connected with working Animation and Game Design: Media Technology professionals through field trips, job shadowing and Career Coaching, leading to opportunities for direct job training and real-world experience. Students will create and maintain digital portfolios of their experiences to document the development of their skills, including professional resumes.

Additional Learning Opportunities

- **Micro-credentials:** Students may pursue learning experiences and credentials depending on the requirements of the project that they are involved in. Some examples for this concentration include, but are not limited to:
    - Adobe Certified Associate (ACA)
    - App Development with Swift Certification
    - Avid Pro Tools Certifications
    - AWS Certified Cloud Practitioner
    - Certified Internet Web (CIW) Certifications
    - IC3 Digital Literacy Certifications
    - Microsoft 365 Fundamentals Certification
    - Microsoft Office Specialist Associate (Office 365 and Office 2019)
    - Other relevant certifications as they become available through industry collaborations, teacher certifications and student interest.
- **Summer Bridge Enrichment:** Students will have the opportunity to participate in cross-curricular Summer Bridge programs to enhance and enrich their skills. Students will explore and create solutions that address authentic needs in the school and wider community with the involvement of local industry professionals. Students will build on skills learned during the school year to work collaboratively with students from other concentrations and programs.

Pre-Requisites

N/A

Course Objectives

Upon completion of this course students will know and be able to:

1. Describe the various areas within the field of Animation and Game Design: Media Technology.
2. Identify different careers available in Animation and Game Design: Media Technology and the types of skills they require.
3. Describe the skills that enhance employability and success in the workplace.
4. Explain and comply with the guidelines and regulations that affect the use of digital media.
5. Explain the basic principles of design, including color theory.
6. Explain the components of project management in the development of digital media projects.
7. Demonstrate basic computer literacy skills.
8. Demonstrate good digital citizenship and adherence to rules for internet safety.
9. Explain and demonstrate the basics of computer programming applicable to digital media.
10. Demonstrate basic technical and design skills in using desktop publishing applications.

Integrated High School Academics

N/A

Concurrent College Enrollment

TBD

Equipment and Supplies

- **School will provide:** All tools, technology, equipment and supplies to complete projects
- **Student will provide:** N/A

Textbook

TBD

Grading

10% Research and planning for current projects
10% Journal
80% Projects, Presentations, Participation and Performance

Additional Course Policies

- Meet all deadlines and be on time. Meeting deadlines and being on time are a major part of being a professional.
- Produce their best work, including being prepared for presentations.
- Participate in class including contributing to discussions and critiquing their own and others' work, as well as diligently working on their own projects.
- Seek help when needed.

- Be attentive, ask questions if they do not understand something, and offer their opinions.
- Use provided software platforms for preparing and sharing all work.
- Give credit and use proper citations for all research and project ideas.

Course Calendar

Quarter	Driving Question Project	Units of Study

1	**What are the uses and impacts of media technology in society?**
	
	Project #1: TBD
		• Introduction to Animation and Game Design: Media Technology
		• Careers in Animation and Game Design: Media Technology
		• Communication and Employability Skills
		• Digital Literacy:
		  ○ Safety
		  ○ Basic Computer Skills
		• Professional Ethics in Animation and Game Design: Media Technology
		• Work-Based Learning: Career Coaching, Job Shadowing

2	**What is the impact of emerging technology on design?** **Project #2: TBD**	• Fundamental Principles of Design • Project Management in Animation and Game Design: Media Technology • Work-Based Learning: Career Coaching, Job Shadowing
3	**How do technology and design principles work together in digital design?** **Project #3: TBD**	• Digital Literacy: Programming Basics • Getting Started with Digital Design • Work-Based Learning: Career Coaching, Job Shadowing
4	**How do computer applications support the revision and evolution of digital design?** **Project #4: TBD**	• Digital Tools and Software: Digital Design and Publishing Software • Work-Based Learning: Career Coaching, Job Shadowing

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STEAM High School
Animation and Game Design: Media Technology Concentration
Scope and Sequence
Level 1

First Quarter Driving Question: What are the uses and impacts of media technology in society? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Introduction to Animation and Game Design: Media Technology	• What are the different areas within the field of Animation and Game Design: Media Technology? • How do current media and design technologies compare with those used in the past? • What kinds of software and hardware are used for different types of projects? • Why is it important to use appropriate Animation and Game Design: Media Technology terminology? • How can technology be used to exchange and gather information and resources?	• Describe the various areas within the field of Animation and Game Design: Media Technology, including digital imagery and photography, graphic design, video and audio production and postproduction, web page design, 2D and 3D animation, and video game development. • Compare current media and design technologies with those used in the past. • Identify and evaluate software applications appropriate for the development of different types of projects. • Identify operating systems and hardware for compatibility with common software applications. • Define and use appropriate Animation and Game Design: Media Technology terminology. • Use technology to exchange and gather information and resources.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11 **Cluster Standards** AR 1,5,6 IT 1,6,11,12 ST 4,6 **Pathway Standards** AR-AV 1,2,3 AR-VIS 1 ST-ET 4	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7 **Arts** MA 11 **Math** **Science**
Careers in Animation and Game Design: Media Technology	• What are different careers available in Animation and Game Design: Media Technology and what types of skills do they require? • What is the typical career path for Animation and Game Design: Media Technology professionals?	• Identify different careers available in Animation and Game Design: Media Technology and the types of skills they require. • Summarize the current and future outlook for jobs in Animation and Game Design: Media Technology. • Describe the typical career path for Animation and Game Design: Media Technology professionals. • Identify different ways to pursue a career in the Animation and Game Design: Media Technology field. • Identify an area of interest in Animation and Game Design: Media Technology and investigate its entry-level and advancement requirements and its growth potential.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11 **Cluster Standards** AR 1,3,5 IT 1,5,6,11,12 ST 5,6 **Pathway Standards** AR-AV 1 AR-VIS 1	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7 **Arts** MA 11 **Math** **Science**
			Written	**Career Ready Practices**	**ELA**

First Quarter Driving Question: What are the uses and impacts of media technology in society? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Communication and Employability Skills	• What is the importance of good communication? • What does it mean to be a professional? • What is the role of an employee in the Animation and Game Design: Media Technology field? • What is the importance of critical thinking to solving problems? • What is the importance of teamwork? • What are some important social issues of concern in the workplace?	• Describe the communication process, the importance of listening and speaking skills and their relationship to job performance. • Describe the importance of good reading and writing skills and their relationship to job performance. • Present written and oral communication in a clear, concise, and effective manner, including explaining and justifying actions. • Describe professional standards and employability skills, including the role of an employee in the Animation and Game Design: Media Technology field. • Explain and demonstrate workplace professionalism including dependability, positive attitude, work ethic, flexibility, physical and mental resilience. • Describe the role of professional organizations and trade unions in Animation and Game Design: Media Technology. • Explain the importance of critical thinking and how to solve problems. • Describe and demonstrate how to work in a team environment and how to be an effective leader. • Explain how to resolve conflicts with co-workers and supervisors. • Explain how to give and receive constructive feedback. • Demonstrate time-management skills in prioritizing tasks, following schedules, and performing goal-relevant activities in a way that produces efficient results. • Demonstrate punctuality, dependability, reliability, and responsibility in performing assigned tasks. • Explain the importance of an awareness of cultural diversity and respect for differences in the workplace. • Identify and describe various social issues of concern in the workplace.	• Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	CRP 1,2,4,8,9,11,12 **Cluster Standards** AR 1,3 IT 1,3 ST 5,6 **Pathway Standards** AR-AV 1 ST-ET 1,2,6	9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7 **Arts** MA 11 **Math** **Science**
Workplace Safety			**Written**	**Career Ready Practices** CRP 1,2,3,4,5,8,11,12	**ELA** 9-10R 1,2,4,7,8,9

First Quarter Driving Question: What are the uses and impacts of media technology in society? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
OSHA 10 Regulations	• What are the causes and consequences of the most common types of workplace incidents? • What is the role of the OSHA in job-site safety?	• Describe the causes and consequences of the most common types of workplace incidents. • Explain how to recognize and avoid workplace hazards. • Explain the role of the OSHA in job-site safety. • Describe common environmental hazards and how to respond to them. • Dispose of hazardous materials and wastes appropriately. • Identify fire hazards and describe basic firefighting procedures. • Explain the importance and function of safety data sheets (SDS). • Describe how to maintain healthy business practices during an infectious disease outbreak like COVID-19.	• Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist		9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards AR 2 IT 1,4 ST 3,6	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards ST-ET 1,2,6	**CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7
					Arts MA 11
					Math
					Science
Digital Literacy: **Safety**	• What does it mean to be a good digital citizen? • What are some important rules for internet and online safety?	• Explain what being a good digital citizen means. • Explain information literacy. • Explain the ethical use of digital resources. • Explain what a digital footprint is. • Explain how to handle digital communication. • Describe how to protect yourself online, including verifying someone's online identity, verifying that a link is safe, and identifying online scams. • Explain the ways that people can protect their personal privacy online. • Identify ways to recognize and stop cyberbullying.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,5,8,11,12	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards AR 2,3,4 IT 1,4,5,8,11,12 ST 6	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards AR-AV 3 IT-WD 1,10 ST-ET 1,2,4,6	**CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7
					Arts MA 11
					Math
					Science
Digital Literacy: **Basic Computer Skills**	• Why is ergonomics a consideration for those who work with computers? • What are the functions of computing systems? • What are the different basic knowledge and skills needed when using a	• Identify ergonomic hazards in the workplace. • Apply ergonomic guidelines for computer use. • Explain the functions of computing systems. • Use keyboarding techniques to improve typing speed and accuracy. • Demonstrate booting, accessing, and exiting an OS and applications.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation	**Career Ready Practices** CRP 1,2,4,8,11,12	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards AR 6 IT 1,7,11,12 ST 6	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7

First Quarter Driving Question: What are the uses and impacts of media technology in society? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
	computer and the internet?	• Use file-management techniques to manipulate and organize folders and files. • Create, edit, and save a document. • Collaborate using web-based resources. • Format documents, tables, graphs, and charts. • Create a spreadsheet. • Incorporate graphic elements in documents. • Create a multimedia presentation. • Troubleshoot computer input/output problems. • Use verbal-input applications. • Digitize content. • Identify the components and functions of a digital input device. • Explain cloud computing. • Save data to the cloud, so it will be accessible from a personal computer (PC), file-hosting service, smartphone, and other devices. • Use search strategies on the internet. • Navigate the internet. • Manage an online account.	• Teacher Observation Checklist	**Pathway Standards** AR-AV 3,4 AR-VIS 3 IT-PRG 3 IT-WD 1 ST-ET 1,3,6	**CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3 **Math** **Science**
Professional Ethics in Animation and Game Design: Media Technology	• What are the guidelines and regulations that affect the use of digital media?	• Explain rules for ethical conduct for maintaining client confidentiality, privacy of personal content, and giving proper credit for ideas. • Demonstrate ethical use of internet and online resources, including citation of sources. • Describe unethical practices such as hacking, online piracy, and data vandalism. • Explain how the First Amendment, Federal Communications Commission regulations, Freedom of Information Act, liability laws, and other regulations affect the use of digital media. • Explain the concept of intellectual property laws, including copyright, trademarks, and patents and the consequences of violating each. • Compare and contrast fair use, open source, and creative commons. • Explain when copyrighted material can be used under Fair Use guidelines. • Comply with copyright laws when creating digital media projects. • Comply with licensing agreements pertaining to software usage.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,5,8,9,11,12 **Cluster Standards** AR 3,4 IT 1,4,5,8 ST 6 **Pathway Standards** IT-WD 1,10 ST-ET 4	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,2,3,4,5,7 9-12.NSD.2 9-12.CY.1,2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 8,9,10,11 **Math** **Science**

First Quarter Driving Question: What are the uses and impacts of media technology in society? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Work-Based Learning: **Career Coaching, Job Shadowing**	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11,12 **Cluster Standards** AR 1,5,6 IT 1,3,4,11,12 ST 5,6 **Pathway Standards** AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,10,11 **Math** **Science**

Second Quarter Driving Question: What is the impact of emerging technologies on design? Project #2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Fundamental Principles of Design	• What are the basic principles of design? • What are the basics of color theory? • How do these principles of design and color apply to media technology projects?	• Identify and apply traditional elements of art such as line shape, color, texture, form, and space. • Identify and apply traditional principles of design such as the manipulation of pattern, proportion, balance, alignment, proximity, variety, emphasis, symmetry, continuity, repetition, contrast, movement, and the Rule of Thirds. • Experiment with 21st century principles of design such as appropriation, juxtaposition, recontextualization, layering, hybridity, the interaction of text and image, and representation. • Experiment with elements of contemporary art such as memory, history, media symbols, material properties, social conventions, cultural artifacts, mythology, and story. • Identify and demonstrate principles of typography, including the manipulation of fonts and typefaces, contrast, consistency, white space, alignment, color, and hierarchy. • Identify and apply methods for creating perspective such as adding backgrounds, light sources, shades, shadows, and scale to capture a focal point and create the illusion of depth. • Identify and apply three-dimensional effects such as foreground, middle distance, and background images. • Describe the spectral colors within the visible light spectrum. • Define and explain the terminology related to color (e.g., Chroma, lightness, saturation, hue, intensity, luminance/value, shade, and tint). • Describe and experiment with the difference between additive and subtractive color mixing. • Compare and contrast different types of color models used in digital design (e.g., RGB, CMYK, Pantone Color Matching System, and HEX). • Explore how different combinations of spectral colors in the visible light spectrum articulated in various relationships (e.g., complimentary,	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,7,8,11,12 **Cluster Standards** AR 1,6 IT 1,3,11,12 ST 6 **Pathway Standards** AR-AV 1,4 AR-PRT 2 AR-VIS 1,2,3 IT-PRG 2,3 IT-WD 5,6,7 ST-ET 5	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,4,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,4,5,6,7 **CSDF** 9-12.IC.7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3 **Math** **Science**

Second Quarter Driving Question: What is the impact of emerging technologies on design? Project #2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		analogous, monochromatic) can tell different visual stories. • Analyze the impact of mixing varying combinations of color to alter mood and setting in a visual story. • Apply color theory to a digital design. • Compare and contrast printed and digital communications products that demonstrate appropriate and inappropriate use of traditional and 21st century principles of design and layout techniques. • Experiment with iterative techniques for expanding upon and generating variations of original digital designs in various applications. • Analyze original designs to interpret and evaluate design decisions. • Create, revisit, and improve digital designs by applying the appropriate design and layout principles.			
Project Management in Animation and Game Design: Media Technology	• What are the components of project management? • How is project management applied to design, multimedia, and web technologies? • Why are planning and time-management skills crucial to completing a project? • What takes place during each phase of project management?	• Identify the components of project management: initiation, planning, execution, performance, and monitoring, and close. • Explain how project management is applied to design, multimedia, and web technology projects. • Demonstrate planning and time-management skills in completing a project. • Initiate a project, including identifying the purpose, audience, and audience needs for design plans. • Develop a plan for a media project and identify equipment and resources. • Execute, monitor, and control a project along its timeline and make suggested revisions until completion of the project. • Close a project, including identifying lessons learned.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,9,11,12 **Cluster Standards** AR 1 IT 1,3 ST 1,6 **Pathway Standards** AR-AV 1 AR-PRT 1,2 IT-PRG 1,2,3 IT-WD 3 ST-ET 3	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,4,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,4,5,6,7 **CSDF** 9-12.IC.7 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,9 **Math** **Science**
Work-Based Learning:	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment	**Career Ready Practices** CRP 1,2,4,7,10,11,12	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6

Second Quarter Driving Question: What is the impact of emerging technologies on design? Project #2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Career Coaching, Job Shadowing			• Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	**Cluster Standards** AR 1,5,6 IT 1,3,4,11,12 ST 5,6 **Pathway Standards** AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,10,11 **Math** **Science**

Third Quarter Driving Question: How do technology and design principles work together in digital design? Project #3: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Digital Literacy: **Programming Basics**	• What is a computer program? • Why is programming a necessary skill in the Animation and Game Design: Media Technology field? • What does it mean to think like a programmer? • What are the components of a computer program?	• Explain what a computer program is and why programming is a necessary skill in Animation and Game Design: Media Technology. • Explain what it means to think like a programmer. • Describe different programming languages, such as Python, Java, and C++, and explain how they are applied to different types of programming tasks. • Describe the basic components of a computer program. • Define and use variables and operations to create a program. • Define and use sub-assemblies, including statements and data structures to build code. • Write code using reusable functions. • Access and use libraries of reusable functions. • Write code that is usable by other people and establish how well it works.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11,12 **Cluster Standards** AR 1,6 IT 1,2,3,11,12 ST 2,6 **Pathway Standards** AR-AV 4 AR-VIS 3 IT-PRG 2,3,6,7 IT-WD 4,5,6 ST-ET 5,6	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3 **Math** **Science**
Getting Started with Digital Design	• What is the impact of emerging technologies on digital design?	• Compare and contrast emerging technologies relative to their role in digital design (e.g., wireless, cloud-based, and mobile devices). • Describe social media as a form of digital design. • Describe the emergent and evolving nature of software applications used in interactive design. • Explain how the use of advanced image sensing devices have altered the manner in which communication takes place, especially those utilizing Quick Response (QR) Codes and other forms of two-dimensional bar-coding techniques. • Define the terms commonly used in digital design. • Identify different types of software used in digital design.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 1,3,11,12 ST 6 **Pathway Standards** AR-AV 2,4 AR-PRT 2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 5	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,4,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3 **Math** **Science**
Work-Based Learning:	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment • Job Shadow Reflection	**Career Ready Practices** CRP 1,2,4,7,10,11,12	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6

Third Quarter Driving Question: How do technology and design principles work together in digital design? Project #3: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Career Coaching, Job Shadowing			• Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	**Cluster Standards** AR 1,5,6 IT 1,3,4,11,12 ST 5,6 **Pathway Standards** AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,10,11 **Math** **Science**

Fourth Quarter Driving Question: How do computer applications support the revision and evolution of digital design? Project #4: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Digital Tools and Software: **Digital Design and Publishing Software**	• What are the basic technical skills needed for using a desktop publishing application? • What are the basic principles of page layout?	• Demonstrate basic technical skills using desktop publishing applications, such as Microsoft Publisher, Adobe InDesign, Swift Publisher, Affinity Publisher, Scribus, and LucidPress. • Identify different components in a layout (e.g., headlines, subheads, and body copy). • Determine the basic layout for a specified purpose. • Demonstrate basic use of typography. • Design a document using grids and formats. • Compare and contrast units of measurement (e.g., inches, centimeters, millimeters, points, picas, and pixels). • Produce a variety of design layouts (e.g., flyers, postcards, brochures, business cards, and letterhead). • Select the appropriate color format and resolution for a variety of purposes. • Incorporate clip art, images, borders, and other special effects into a layout. • Incorporate scanned and digital photographs into documents comprising a specified design. • Proofread manually and digitally.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 1,3,11,12 ST 6 **Pathway Standards** AR-AV 2,4 AR-PRT 2,3 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 5	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,4,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6 **Math** **Science**
Work-Based Learning: **Career Coaching, Job Shadowing**	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11,12 **Cluster Standards** AR 1,5,6 IT 1,3,4,11,12 ST 5,6 **Pathway Standards** AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,10,11 **Math** **Science**

2 STEAM High School
Animation and Game Design: Media Technology Concentration
Course Syllabus
Level 2

Concentration Overview

This concentration is designed to prepare students for entry level careers or further education and training in professions that use visual art, digital media, and Web-based tools and materials as the primary means of communication and expression. The program will support students as they learn to design and edit many forms of digital media. Students will develop skills in both visual art concepts as well as new and emerging digital processes in multiple types of media for multiple applications, including digital photography, digital image editing, graphic design, website design, video and audio production and post-production, 2D and 3D computer animation, and innovative video game design. Students will apply the fundamentals of design to create digital environments, and explore a range of media production principles in color manipulation, and audio and video editing. After working with multiple digital media applications, students will have the opportunity to focus their learning and specialize in a particular area of interest. In collaboration with students in the other STEAM concentrations, especially the Entertainment Engineering concentration, students will apply design and production techniques to create quality digital media projects that communicate complex concepts and address authentic questions in their community, Students will demonstrate clear and accurate communication skills, leadership and collaboration skills and an awareness of issues around diversity, professional ethics, and environmental responsibility. Students will also learn about cyber safety and be able to make informed decisions about their behaviors and the risks they take when using the internet and mobile technologies. Students will utilize the latest digital technology tools, such as Adobe Creative Cloud, Avid Pro Tools, Autodesk video and gaming software, gaming engines, and open-source software for multiple digital media applications. As they continue through the concentration, students will have the opportunity to earn micro credentials in digital applications, such as Adobe Certified Associate (ACA), App Development with Swift Certification, Avid Pro Tools Certifications, AWS Certified Cloud Practitioner, Certified Internet Web (CIW) Certifications, and Microsoft 365 Certifications to add to interactive digital portfolios of their work.

Course Description

This course is designed for students to build on the knowledge and skills of Animation and Game Design: Media Technology that they developed in the Level 1 course. Students will continue to explore more of the focus areas of the concentration in order to both build their technical skill sets and hone their interests for further application and study in future coursework. Students will be introduced to a variety of technologies, tools, and applications in Animation and Game Design: Media Technology for digital photography and editing, website development, and video and audio production and postproduction projects. Students will use elements of text, graphics, audio, and video to design and create multimedia, and web-based projects that address a need or answer a question. Students will experience first-hand the production workflow including planning, production and post production and will understand the importance of collaboration and teamwork. Students will continue to enhance their skills in reading, writing, computing, communication, and critical thinking and apply them to the Animation and Game Design: Media Technology environment. Students will continue to research career opportunities in the Animation and Game Design: Media Technology field and will update interactive digital portfolios of their work, including professional resumes.

All students will engage in project-based learning at a minimum of one project each quarter. Intrinsic to project-based learning is examining a driving question or identifying a problem by articulating what is already known, and what students need to know to answer the question. Students are guided to develop and execute a plan culminating in a presentation demonstrating their response to the initial question or problem. This process concludes with self-reflection regarding their learning. As such, learning happens during the process of completing a project and not solely as a final activity to demonstrate what has been learned. In this second level of the concentration, projects will focus on continued self-assessment in using a wide variety of digital technologies and creating a plan for continued growth. Projects focusing on application of design concepts and use of digital tools to create a variety of products and meet an authentic need will be key.

Work-Based Learning

All of the instruction for this course will be project-based where students will be developing, planning, executing and presenting authentic Animation and Game Design: Media Technology projects based on community needs. Students will be connected with working Animation and Game Design: Media Technology professionals through field trips, job shadowing and Career Coaching, leading to opportunities for direct job training and real-world

experience. Students will create and maintain digital portfolios of their experiences to document the development of their skills, including professional resumes.

Additional Learning Opportunities

- **Micro-credentials:** Students may pursue learning experiences and credentials depending on the requirements of the project that they are involved in. Some examples for this concentration include, but are not limited to:
    - Adobe Certified Associate (ACA)
    - App Development with Swift Certification
    - Avid Pro Tools Certifications
    - AWS Certified Cloud Practitioner
    - Certified Internet Web (CIW) Certifications
    - IC3 Digital Literacy Certifications
    - Microsoft 365 Fundamentals Certification
    - Microsoft Office Specialist Associate (Office 365 and Office 2019)
    - Other relevant certifications as they become available through industry collaborations, teacher certifications and student interest.
- **Summer Bridge Enrichment:** Students will have the opportunity to participate in cross-curricular Summer Bridge programs to enhance and enrich their skills. Students will explore and create solutions that address authentic needs in the school and wider community with the involvement of local industry professionals. Students will build on skills learned during the school year to work collaboratively with students from other concentrations and programs.

Pre-Requisites

Animation and Game Design: Media Technology Level 1

Course Objectives

Upon completion of this course students will know and be able to:

1. Research the various areas within the field of Animation and Game Design: Media Technology.
2. Identify different careers available in Animation and Game Design: Media Technology and the types of skills they require.
3. Demonstrate the skills that enhance employability and success in the workplace.
4. Explain and comply with the guidelines and regulations that affect the use of digital media.
5. Apply the basic principles of design, including color theory.
6. Explain the components of project management in the development of digital media projects.
7. Demonstrate intermediate computer literacy skills.
8. Demonstrate good digital citizenship and adherence to rules for internet safety.
9. Demonstrate basic technical and design skills in digital photography and digital imagery design.
10. Demonstrate basic technical and design skills developing a website.
11. Demonstrate basic technical and design skills in creating and editing video and audio productions.

Integrated High School Academics

N/A

Concurrent College Enrollment

TBD

Equipment and Supplies

- **School will provide:** All tools, technology, equipment and supplies to complete projects
- **Student will provide:** N/A

Textbook

TBD

Grading

10% Research and planning for current projects
10% Journal
80% Projects, Presentations, Participation and Performance

Additional Course Policies

- Meet all deadlines and be on time. Meeting deadlines and being on time are a major part of being a professional.
- Produce their best work, including being prepared for presentations.
- Participate in class including contributing to discussions and critiquing their own and others' work, as well as diligently working on their own projects.
- Seek help when needed.
- Be attentive, ask questions if they do not understand something, and offer their opinions.
- Use provided software platforms for preparing and sharing all work.
- Give credit and use proper citations for all research and project ideas.

Course Calendar

Quarter	Driving Question Project	Units of Study
1	**Why are professional ethics important in the field of media technology?** **Project #1: TBD**	• Careers in Animation and Game Design: Media Technology • Communication and Employability Skills • Professional Ethics in Animation and Game Design: Media Technology • Project Management in Animation and Game Design: Media Technology • Work-Based Learning: Career Coaching, Job Shadowing

2	**How does purpose affect visual design?**
	
	Project #2: TBD
		• Digital Tools and Software:
		  ○ Digital Photography
		  ○ Creating Digital Imagery and Visual Design
		• Work-Based Learning: Career Coaching, Job Shadowing

3	**How is design determined by function?** **Project #3: TBD**	• Digital Tools and Software: Introduction to Website Development • Work-Based Learning: Career Coaching, Job Shadowing
4	**How does feasibility affect both production and postproduction?** **Project #4: TBD**	• Digital Tools and Software: Introduction to Video and Audio Production and Postproduction • Work-Based Learning: Career Coaching, Job Shadowing

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STEAM High School
Animation and Game Design: Media Technology Concentration
Scope and Sequence
Level 2

First Quarter
Driving Question: Why are professional ethics important in the field of media technology?
Project #1: TBD

Unit	Key Questions	Key Learning Targets (Students will know and be able to:)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Careers in Animation and Game Design: Media Technology	• What are different careers available in Animation and Game Design: Media Technology and what types of skills do they require? • What is the typical career path for Animation and Game Design: Media Technology professionals?	• Research different careers available in Animation and Game Design: Media Technology and the types of skills they require. • Summarize the current and future outlook for jobs in Animation and Game Design: Media Technology. • Describe the typical career path for Animation and Game Design: Media Technology professionals. • Summarize different ways to pursue a career in the Animation and Game Design: Media Technology field, including two- and four-year degree programs. • Research an area of personal interest in Animation and Game Design: Media Technology, its entry-level and advancement requirements, and its growth potential.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards AR 1,3,5 IT 1,5,6,11,12 ST 5,6	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards AR-AV 1 AR-VIS 1	**CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7
					Arts MA 11
					Math
					Science
Communication and Employability Skills	• What is the importance of good communication? • What does it mean to be a professional? • What is the importance of critical thinking to solving problems? • What is the importance of teamwork? • What are some important social issues of concern in the workplace?	• Present written and oral communication in a clear, concise, and effective manner. • Describe and demonstrate professional standards for working in the Animation and Game Design: Media Technology field, including dependability, positive attitude, work ethic, flexibility, physical and mental resilience. • Demonstrate critical thinking in troubleshooting problems and solutions. • Work effectively in a team environment as both team member and team leader. • Research current professional organizations and trade unions in Animation and Game Design: Media Technology and the impact they have had on the industry. • Resolve conflicts with team members and team leaders. • Demonstrate time-management skills, reliability, and responsibility in performing tasks.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,9,11,12	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards AR 1,3 IT 1,3 ST 5,6	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards AR-AV 1 ST-ET 1,2,6	**CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7
					Arts MA 11
					Math
					Science

First Quarter Driving Question: Why are professional ethics important in the field of media technology? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Recognize and address social issues of concern in the workplace. • Demonstrate an awareness of cultural diversity and respect for differences in the workplace. • Identify and describe various social issues of concern in the workplace.			
Workplace Safety **OSHA 10 Regulations**	• What are the causes and consequences of the most common types of workplace incidents? • What is the role of the OSHA in job-site safety?	• Describe the causes and consequences of the most common types of workplace incidents. • Explain how to recognize and avoid workplace hazards. • Explain the role of the OSHA in job-site safety. • Describe common environmental hazards and how to respond to them. • Dispose of hazardous materials and wastes appropriately. • Identify fire hazards and describe basic firefighting procedures. • Describe how to maintain healthy business practices during an infectious disease outbreak like COVID-19.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,3,4,5,8,11,12 **Cluster Standards** AR 2 IT 1,4 ST 3,6 **Pathway Standards** ST-ET 1,2,6	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7 **Arts** MA 11 **Math** **Science**
Professional Ethics in Animation and Game Design: Media Technology	• What are the guidelines and regulations that affect the use of digital media?	• Demonstrate ethical use of Internet and online resources, including citation of sources. • Explain intellectual property laws, including copyright, trademarks, and patents and the consequences of violating each type of law. • Comply with copyright laws when creating digital media projects. • Explain when copyrighted material can be used under Fair Use guidelines. • Comply with licensing agreements pertaining to software usage.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,5,8,9,11,12 **Cluster Standards** AR 3,4 IT 1,4,5,8 ST 6 **Pathway Standards** IT-WD 1,10 ST-ET 4	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,2,3,4,5,7 9-12.NSD.2 9-12.CY.1,2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 8,9,10,11 **Math** **Science**

First Quarter Driving Question: Why are professional ethics important in the field of media technology? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Project Management in Animation and Game Design: Media Technology	• What are the components of project management? • Why are planning and time-management skills crucial to completing a project? • What takes place during each phase of project management? • How can giving and receiving constructive feedback improve project workflow?	• Explain the components of project management: initiation, planning, execution, performance and monitoring, and close. • Explain the financial components of project management, including accounting practices, inventory, invoicing, and payroll. • Demonstrate planning skills in completing a project. • Initiate a project, including identifying the purpose, audience, and audience needs for design plans. • Develop a plan for a media project and identify equipment and resources. • Execute, monitor and control a project along its timeline and make suggested revisions until completion of the project. • Close a project, including identifying lessons learned. • Give and receive constructive feedback that is goal-referenced, tangible and transparent, actionable, user-friendly, timely, ongoing, and consistent.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,9,11,12 **Cluster Standards** AR 1 IT 1,3 ST 1,6 **Pathway Standards** AR-AV 1 AR-PRT 1,2 IT-PRG 1,2,3 IT-WD 3 ST-ET 3	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.7 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,9 **Math** **Science**
Work-Based Learning: **Career Coaching, Job Shadowing**	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11,12 **Cluster Standards** AR 1,5,6 IT 1,3,4,11,12 ST 5,6 **Pathway Standards** AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,10,11 **Math** **Science**

Second Quarter Driving Question: How does purpose affect visual design? Project #2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Digital Tools and Software: **Digital Photography**	• How does digital photography work? • How are the principles of design applied to digital photography?	• Demonstrate the operation of a digital camera (typical features/modes). • Demonstrate proper use of safety procedures while using digital photography equipment. • Capture still shot images using digital photography equipment incorporating various photo composition techniques such as lighting, perspective, candid versus posed, rule of thirds, and level of horizon. • Transfer still shot images from equipment to the computer. • Demonstrate proper use of scanners and other types of input devices. • Apply effective design principles in digital photography compositions. • Explain the digital photography workflow.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 2 AR-PRT 2 AR-VIS 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,4,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6 **Math** **Science**
Digital Tools and Software: **Creating Digital Imagery and Visual Design**	• How are digital images designed, created and edited? • How are the principles of design applied to digital imagery? • What are raster images? • What are vector images?	• Use photo editing software to import, transform and crop images. • Explain the use of graphic resolution, file size, file formats, and file management in creating and editing digital images. • Compare and contrast image formats (e.g., BMP, EPS, GIF, JPEG, PDF, PNG, RAW, TIF). • Determine the type of data stored in a file based on its file extension and select appropriate software to modify, create, and view the file. • Differentiate between color mode selections in determining product output. • Identify the attributes of line art, grayscale, duotone, spot color and the four-color process. • Demonstrate photographic enhancement techniques such as feathering, layering, masking, and color enhancement. • Explain image resolution and compression factors in creating digital images. • Compare and contrast the characteristics of raster-based (bitmap) graphics and vector-based graphics. • Demonstrate the basic tools and techniques of raster-based software applications, such as	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 2 AR-PRT 2 AR-VIS 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,4,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6 **Math** **Science**

Second Quarter Driving Question: How does purpose affect visual design? Project #2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		Adobe Photoshop, Corel PaintShop, SketchBook, and GIMP. • Demonstrate the basic tools and techniques of vector software applications, such as Adobe Illustrator, CorelDraw, Inkscape, and Affinity Designer. • Utilize principles of image composition and design principles in digital imagery projects.			
Work-Based Learning: **Career Coaching, Job Shadowing**	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11,12	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards AR 1,5,6 IT 1,3,4,11,12 ST 5,6	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,10,11
					Math
					Science

Third Quarter Driving Question: How is design determined by function? Project #3: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Digital Tools and Software: **Introduction to Website Development**	• What is the process for creating, publishing updating, and maintaining a website?	• Describe the process for creating, publishing, updating, and maintaining a website. • Research new and emerging trends and technologies in web development. • Explain the use of websites for marketing purposes. • Define what Customer Relationship Management (CRM) systems are, how they are used, and their relationship to website development. • Identify the basic components of an e-commerce website. • Analyze networking essentials in website construction. • Explain IP addresses and the domain naming system (DNS). • Evaluate website development and hosting applications, such as Wix, Weebly, Adobe Dreamweaver, WordPress, Webflow, and Microsoft VS Code. • Explain the use of HTML and CSS in website development. • Interpret HTML coding to identify the structure of an existing webpage. • Describe the use of Cascading Style Sheets (CSS) on an existing webpage • Evaluate a website according to design principles. • Describe design of websites for accessibility and accommodation of persons with special needs. • Explain the use of style sheets for consistent website design. • Use storyboarding to plan a website. • Apply design principles to create a website, using design software and/or a programming language. • Identify styles and other design elements (e.g., backgrounds, colors, fonts, and buttons). • Develop HTML coding to write a webpage. • Save and export photographs and graphics to the web in the best format for image quality and file size.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 4 AR-PRT 2 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**ELA** 9-10R 1,2,3,4,7,8,9 9-10W 2,3,4,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6 **Math** **Science**

Third Quarter Driving Question: How is design determined by function? Project #3: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment** **Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Format text for webpages (e.g., font families, sizes). • Create and insert buttons into a webpage and test for accuracy. • Optimize page size for effective downloading to browsers. • Create and incorporate a form into a webpage. • Create, edit, and test links for accuracy and validity. • Test a website for functionality and accessibility.			
Work-Based Learning: **Career Coaching, Job Shadowing**	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11,12	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards AR 1,5,6 IT 1,3,4,11,12 ST 5,6	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,10,11
					Math
					Science

Fourth Quarter Driving Question: How does feasibility affect both production and postproduction? Project #4: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Digital Tools and Software: **Introduction to Video and Audio Production and Postproduction**	• How are audio and video productions created? • How is digital video edited? • How is digital audio edited?	• Identify the broad range of roles for digital video and audio production and postproduction. • Explain the pre-production, production, and postproduction processes. • Collaborate with team members to plan a digital video and audio project, including scripting, storyboard, shot list, equipment list, and production schedule. • Use storyboarding to plan a short video project that includes existing video footage with a title, transitions, background sound, voice-over, and credits. • Correctly use video recording equipment. • Demonstrate proper shooting techniques including composition, lighting, point-of-view and field-of-view. • Capture video and download files to computer. • Select and utilize essential audio equipment, including microphones, recorders, and preamplifiers. • Explain and demonstrate the main functions of a digital audio workstation, such as mixing multiple signals, importing and exporting audio, and editing audio clips. • Describe room acoustics and the impact this has on audio recording. • Capture sound from an original or existing source. • Review and organize video and audio in preparation for editing. • Identify the components of non-linear editing equipment. • Set up non-linear editing equipment. • Prepare digital video and audio files using video and audio editing software, such as Adobe Premiere Pro, Adobe After Effects, Adobe Audition, Avid Pro Tolls, Autodesk Smoke, Foundry Nuke, and Audacity. • Identify quality differences and use different video formats (e.g., SD, HD, AVI, MOV, SWF, WMV, MP4, m4v, FLV, VOB).	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 1,2,3,4 AR-VIS 2,3 IT-WD 4 ST-ET 1,3,5,6	**ELA** 9-10R 1,2,3,4,7,8,9 9-10W 2,3,4,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6 **Math** **Science**

Fourth Quarter Driving Question: How does feasibility affect both production and postproduction? Project #4: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Identify quality differences and use different audio formats (e.g., WAV, MIDI, MP3, AIFF, AAC, MP4, M4A, WMA, FLAC, DSD). • Apply special effects to audio files. • Synchronize between various pieces of professional audio and video equipment. • Identify and use various types of sound (voice over/narration, music, sound effects, foley). • Publish a digital video and audio project. • Explain various applications for Extended Reality (XR), including Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR). • Describe hardware and software technologies that can be used for XR projects, 360 video and other immersive sensory experiences.			
Work-Based Learning: **Career Coaching, Job Shadowing**	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11,12 **Cluster Standards** AR 1,5,6 IT 1,3,4,11,12 ST 5,6 **Pathway Standards** AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,10,11 **Math** **Science**

3 STEAM High School
Animation and Game Design: Media Technology Concentration
Course Syllabus
Level 3

Concentration Overview

This concentration is designed to prepare students for entry level careers or further education and training in professions that use visual art, digital media, and Web-based tools and materials as the primary means of communication and expression. The program will support students as they learn to design and edit many forms of digital media. Students will develop skills in both visual art concepts as well as new and emerging digital processes in multiple types of media for multiple applications, including digital photography, digital image editing, graphic design, website design, video and audio production and post-production, 2D and 3D computer animation, and innovative video game design. Students will apply the fundamentals of design to create digital environments, and explore a range of media production principles in color manipulation, and audio and video editing. After working with multiple digital media applications, students will have the opportunity to focus their learning and specialize in a particular area of interest. In collaboration with students in the other STEAM concentrations, especially the Entertainment Engineering concentration, students will apply design and production techniques to create quality digital media projects that communicate complex concepts and address authentic questions in their community, Students will demonstrate clear and accurate communication skills, leadership and collaboration skills and an awareness of issues around diversity, professional ethics, and environmental responsibility. Students will also learn about cyber safety and be able to make informed decisions about their behaviors and the risks they take when using the internet and mobile technologies. Students will utilize the latest digital technology tools, such as Adobe Creative Cloud, Avid Pro Tools, Autodesk video and gaming software, gaming engines, and open-source software for multiple digital media applications. As they continue through the concentration, students will have the opportunity to earn micro credentials in digital applications, such as Adobe Certified Associate (ACA), App Development with Swift Certification, Avid Pro Tools Certifications, AWS Certified Cloud Practitioner, Certified Internet Web (CIW) Certifications, and Microsoft 365 Certifications to add to interactive digital portfolios of their work.

Course Description

This course is designed for students to build on the knowledge and skills of Animation and Game Design: Media Technology that they developed in Levels 1 and 2. Students will apply what they have learned to projects in digital photography and visual design, website development, and video and audio production and postproduction. Students will explore more of the focus areas of the concentration in order to both build their technical skill sets and refine their interests for further application and study in future coursework. Students will be introduced to a variety of technologies, tools, and applications to design and create 2D and 3D digital models and animations, and original video games. Students will use elements of text, graphics, sound, and video to design and create multimedia, and web-based projects that address a need or answer a question. Students will continue to experience the production workflow including planning, production and post production and will understand the importance of collaboration and teamwork. Students will enhance their skills in reading, writing, computing, communication, and critical thinking and apply them to the Animation and Game Design: Media Technology environment. Students will research career and education opportunities in Animation and Game Design: Media Technology, focusing on potential areas of interest and creating applications for those opportunities. Students will continue to work on completing the requirements for credentials relevant to the projects they are involved in. Students will continue to update interactive digital portfolios of their work, including professional resumes.

All students will engage in project-based learning at a minimum of one project each semester. Intrinsic to project-based learning is examining a driving question or identifying a problem by articulating what is already known, and what students need to know to answer the question. Students are guided to develop and execute a plan culminating in a presentation demonstrating their response to the initial question or problem. This process concludes with self-reflection regarding their learning. As such, learning happens during the process of completing a project and not solely as a final activity to demonstrate what has been learned. In this level of the concentration, projects will focus on continued self-assessment in using a wide variety of digital technologies and creating a plan for continued growth. Projects focusing on application of design concepts and use of digital tools to create a variety of products and meet an authentic need will be key.

Work-Based Learning

All of the instruction for this course will be project-based where students will be developing, planning, executing and presenting authentic Animation and Game Design: Media Technology projects based on community needs.

Students will be connected with working Animation and Game Design: Media Technology professionals through field trips, job shadowing and Career Coaching, leading to opportunities for direct job training and real-world experience. Students will create and maintain digital portfolios of their experiences to document the development of their skills, including professional resumes.

Additional Learning Opportunities

- **Micro-credentials:** Students may pursue learning experiences and credentials depending on the requirements of the project that they are involved in. Some examples for this concentration include, but are not limited to:
    - Adobe Certified Associate (ACA)
    - App Development with Swift Certification
    - Avid Pro Tools Certifications
    - AWS Certified Cloud Practitioner
    - Certified Internet Web (CIW) Certifications
    - IC3 Digital Literacy Certifications
    - Microsoft 365 Fundamentals Certification
    - Microsoft Office Specialist Associate (Office 365 and Office 2019)
    - Other relevant certifications as they become available through industry collaborations, teacher certifications and student interest.
- **Summer Bridge Enrichment:** Students will have the opportunity to participate in cross-curricular Summer Bridge programs to enhance and enrich their skills. Students will explore and create solutions that address authentic needs in the school and wider community with the involvement of local industry professionals. Students will build on skills learned during the school year to work collaboratively with students from other concentrations and programs.

Pre-Requisites

Animation and Game Design: Media Technology Levels 1 and 2

Course Objectives

Upon completion of this course students will know and be able to:

1. Research the various areas within the field of Animation and Game Design: Media Technology.
2. Create applications for post-secondary employment and/or education opportunities.
3. Demonstrate the skills that enhance employability and success in the workplace.
4. Explain and comply with the guidelines and regulations that affect the use of digital media.
5. Apply the basic principles of design to digital multimedia projects.
6. Demonstrate the components of project management in the development of digital media projects.
7. Demonstrate good digital citizenship and adherence to rules for internet safety.
8. Demonstrate technical and design skills in digital photography, digital imagery design, website development, and video and audio production and postproduction.
9. Demonstrate basic technical and design skills in creating 2D and 3D models and animations.
10. Demonstrate basic technical and design skills in designing and creating an original video game.

Integrated High School Academics

N/A

Concurrent College Enrollment

TBD

Equipment and Supplies

- **School will provide:** All tools, technology, equipment and supplies to complete projects
- **Student will provide:** N/A

Textbook

TBD

Grading

10% Research and planning for current projects
10% Journal
80% Projects, Presentations, Participation and Performance

Additional Course Policies

- Meet all deadlines and be on time. Meeting deadlines and being on time are a major part of being a professional.
- Produce their best work, including being prepared for presentations.
- Participate in class including contributing to discussions and critiquing their own and others' work, as well as diligently working on their own projects.
- Seek help when needed.
- Be attentive, ask questions if they do not understand something, and offer their opinions.
- Use provided software platforms for preparing and sharing all work.
- Give credit and use proper citations for all research and project ideas.

Course Calendar

Quarter	Driving Question Project	Units of Study

1	**How do different areas of design combine to create something new?**
	
	Project #1: TBD
		• Career and Post-Secondary Education Research and Applications
		• Communication and Employability Skills
		• Professional Ethics in Animation and Game Design: Media Technology
		• Project Management in Animation and Game Design: Media Technology
		• Digital Tools and Software
		  ○ Digital Imagery and Visual Design
		  ○ Website Development
		  ○ Video and Audio Production and Postproduction
		• Work-Based Learning: Career Coaching, Job Shadowing

2		• Digital Tools and Software: Introduction to 2D and 3D Animation • Work-Based Learning: Career Coaching, Job Shadowing
3	**How are designs tested and evaluated?** **Project #2: TBD**	• Digital Tools and Software: Introduction to Video Game Design • Work-Based Learning: Career Coaching, Job Shadowing
4		• Digital Tools and Software: Bringing It Into Focus • Work-Based Learning: Career Coaching, Job Shadowing

3

STEAM High School
Animation and Game Design: Media Technology Concentration
Scope and Sequence
Level 3

First Quarter
Driving Question: How do different areas of design combine to create something new?
Project #1: TBD

Unit	Key Questions	Key Learning Targets (Students will know and be able to:)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Career and Post-Secondary Education Research and Applications	• What different careers are available in Animation and Game Design: Media Technology and what types of education and training do they require?	• Research different institutions that offer post-secondary education and training Animation and Game Design: Media Technology careers. • Research different opportunities that offer post-secondary employment in Animation and Game Design: Media Technology. • Create applications for post-secondary employment and/or education opportunities.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio • Job Applications • College Applications **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11 **Cluster Standards** AR 1,3,5 IT 1,5,6,11,12 ST 5,6 **Pathway Standards** AR-AV 1 AR-VIS 1	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7 **Arts** MA 11 **Math** **Science**
Communication and Employability Skills	• What is the importance of good communication? • What does it mean to be a professional? • What is the importance of critical thinking to solving problems? • What is the importance of teamwork? • What are some important social issues of concern in the workplace?	• Present written and oral communication in a clear, concise, and effective manner. • Describe and demonstrate professional standards for working in the Animation and Game Design: Media Technology field, including dependability, positive attitude, work ethic, flexibility, physical and mental resilience. • Demonstrate critical thinking in troubleshooting problems and solutions. • Work effectively in a team environment as both team member and team leader. • Resolve conflicts with team members and team leaders. • Explain the impact of membership in professional organizations and trade unions. • Demonstrate time-management skills, reliability, and responsibility in performing tasks. • Demonstrate an awareness of cultural diversity and respect for differences in the workplace.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,9,11,12 **Cluster Standards** AR 1,3 IT 1,3 ST 5,6 **Pathway Standards** AR-AV 1 ST-ET 1,2,6	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7 **Arts** MA 11 **Math** **Science**

First Quarter Driving Question: How do different areas of design combine to create something new? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Recognize and address social issues of concern in the workplace.			
Workplace Safety **OSHA 10 Certification**	• What are the causes and consequences of the most common types of workplace incidents? • What is the role of the OSHA in job-site safety?	• Describe the causes and consequences of the most common types of workplace incidents. • Explain and demonstrate how to recognize and avoid workplace hazards. • Explain the role of the OSHA in job-site safety. • Obtain OSHA 10 Certification. • Describe common environmental hazards and how to respond to them. • Dispose of hazardous materials and wastes appropriately. • Identify fire hazards and describe basic firefighting procedures. • Describe how to maintain healthy business practices during an infectious disease outbreak like COVID-19.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,3,4,5,8,11,12 **Cluster Standards** AR 2 IT 1,4 ST 3,6 **Pathway Standards** ST-ET 1,2,6	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7 **Arts** MA 11 **Math** **Science**
Professional Ethics in Animation and Game Design: Media Technology	• What are the guidelines and regulations that affect the use of digital media?	• Demonstrate ethical use of Internet and online resources, including citation of sources. • Explain intellectual property laws, including copyright, trademarks, and patents and consequences of violating each type of law. • Comply with copyright laws when creating digital media projects. • Explain when copyrighted material can be used under Fair Use guidelines. • Comply with licensing agreements pertaining to software usage.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,5,8,9,11,12 **Cluster Standards** AR 3,4 IT 1,4,5,8 ST 6 **Pathway Standards** IT-WD 1,10 ST-ET 4	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **CSDF** 9-12.IC.1,2,3,4,5,7 9-12.NSD.2 9-12.CY.1,2,3 9-12.DL.1,2,4,5,6,7 **Arts** MA 8,9,10,11 **Math** **Science**
Project Management in Animation and	• What are the components of project management?		**Written** • Research Project	**Career Ready Practices** CRP 1,2,4,6,8,9,11,12	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7

First Quarter Driving Question: How do different areas of design combine to create something new? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Game Design: Media Technology	• Why are planning and time-management skills crucial to completing a project? • What takes place during each phase of project management? • How can giving and receiving constructive feedback improve project workflow?	• Explain the components of project management: initiation, planning, execution, performance and monitoring, and close. • Explain the financial components of project management, including accounting practices, inventory, invoicing, and payroll. • Demonstrate planning and scheduling skills in completing a project. • Initiate a project, including identifying the purpose, audience, and audience needs for design plans. • Develop a plan for a media project and identify equipment and resources. • Execute, monitor and control a project along its timeline and make suggested revisions until completion of the project. • Close a project, including identifying lessons learned. • Give and receive constructive feedback that is goal-referenced, tangible and transparent, actionable, user-friendly, timely, ongoing, and consistent.	• Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist		11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1 IT 1,3 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards AR-AV 1 AR-PRT 1,2 IT-PRG 1,2,3 IT-WD 3 ST-ET 3	**CSDF** 9-12.IC.7 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,9
					Math
					Science
Digital Tools and Software: **Digital Imagery and Visual Design** **Website Development** **Video and Audio Production and Postproduction**	• How are digital imagery projects, websites, and video and audio productions designed, created and edited? • How are the principles of design applied to digital imagery projects, websites, and video and audio productions?	• Select appropriate software for a digital media project, including digital imagery, websites, and video and audio productions. • Apply principles of design to a digital media project. • Create and manipulate digital images, and graphics, digital video, and digital audio using a variety of techniques and software applications. • Analyze options and costs for a digital media project. • Apply project management principles to create professional quality digital media projects.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,4,5,6,7
				Pathway Standards AR-AV 1,2,3,4 AR-PRT 2 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6
					Math
					Science
			Written	**Career Ready Practices**	**ELA**

<table>
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Project #1: TBD</th></tr>
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(Students will know and be able to:)</th><th>Assessment Evidence of Learning</th><th>CCTC Standards</th><th>NYS Standards</th></tr>
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Career Coaching, Job Shadowing</td><td rowspan="5">• What can be learned from Animation and Game Design: Media Technology professionals?</td><td rowspan="5">• Participate in Career Coaching process.
• Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.</td><td rowspan="5">• Career Coaching Self-Assessment
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<tr><td>Math

Science</td></tr>
</table>

Second Quarter Driving Question: How do different areas of design combine to create something new? Project #1 (continued): TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Digital Tools and Software: **Introduction to 2D and 3D Animation**	• What are the various applications of 2D and 3D animation graphics? • How has animation changed through history? • What are different software applications for within 2D and 3D animation? • What are the major principles of animation? • How are objects animated in 2D and 3D?	• Identify various applications of 2D and 3D animation graphics. • Summarize the history of 2D and 3D modeling and animation. • Identify different software applications for 2D and 3D animation, such as Adobe Animate, Autodesk Maya, Blender, and Dragonframe. • Identify basic components of 2D and 3D software user interface, including timeline, playback controls, and editing functions. • Define common animation terminology, including keyframe, timeline, scrub, in-betweens, playhead, frame rate, and forward kinematics and inverse kinematics (FK/IK). • Explain each of the major principles of animation: squash and stretch, anticipation, staging, straight ahead and pose to pose, follow through and overlapping action, slow in and slow out, arcs, secondary action, timing, exaggeration, solid drawing, and appeal. • Perform changes to position, scale, color, and properties of an animated object. • Utilize timeline animation (frame-by-frame, tween). • Create keyframe animation. • Create tween animation (motion, shape, path). • Utilize symbol/instances. • Animate a cycle. • Edit pivot points. • Identify various animation effects, including particle effects, cloth dynamics, elementals (water, fire, wind). • Create a 3D wire frame model. • Create 3D composites. • Render a model using appropriate visual effects (background, textures, lighting). • Animate a 3D object using the key frame method. • Animate a 3D object using the path method. • Create and manipulate 2D and 3D animations using the principles of animation. • Create animation script and storyboard. • Utilize internal and external libraries.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6 **Math** **Science**

Second Quarter Driving Question: How do different areas of design combine to create something new? Project #1 (continued): TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Import and export assets. • Publish animation to be used in various digital formats.			
Work-Based Learning: **Career Coaching, Job Shadowing**	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11,12	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,5,6 IT 1,3,4,11,12 ST 5,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,10,11
					Math
					Science

Third Quarter Driving Question: How are designs tested and evaluated? Project #2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Digital Tools and Software: **Introduction to Video Game Design**	• What has been the evolution of gaming and its societal impact? • What needs to be considered when developing a game? • What are the core tasks and challenges of video game design? • What are the project management components of game design and development?	• Summarize video game history including key figures and designers in gaming, early games, and important milestones. • Explain game ratings. • Explain the evolution of gaming from arcades, consoles, and PCs to online gaming and its societal impact. • Identify and describe different game platforms. • Explain what needs to be considered when developing a game for a particular platform, or for multiple platforms, including display size, hardware (performance, graphics, storage), input method, portability, and affordability. • Explain the impact of cloud computing and processing on game design. • Identify and understand different game genres and game types. • Explain Bartle's four types of players and their motivation: socializers, achievers, explorers, and killers. • Define the term player immersion and explain the factors that create player immersion. • Analyze the core tasks and challenges of video game design. • Identify and define the roles and responsibilities of each member of a video game design team. • Explain the project management components of game design and development. • Identify the fundamental building blocks of game play, including player goals, player actions, rewards, and challenges. • Describe various input controls and display types and identify how these impact game play. • Describe different game strategies, including victory/loss conditions such as high score, fastest time, most levels, % indicator, and end of story. • Identify the types of feedback needed for players to make progress in the game, e.g., defeating enemies, earning points, reducing health, specific sounds, and winning screen. • Explain the importance of game duration and its impact on play.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 1,2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6 **Math** **Science**

Third Quarter Driving Question: How are designs tested and evaluated? Project #2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Describe the importance of aesthetics in game design in creating an immersive experience. • Describe the various view options for video games: two-dimensional, isometric, first-person, third person, top-down. • Explain design functionality, i.e. what to include in the game with regard to movements. • Describe usability in game control, i.e. the ability for the player to change movements and switch views. • Describe accessibility in game control, including keyboard, mouse, joystick, game controller, and touchscreen. • Explain the difference between diegetic and non-diegetic elements in a game. • Develop a game concept with considerations for plan, cost, and time. • Create a game proposal pitch document including goal, characters, environment, obstacles, and platform. • Create a storyboard. • Sketch and plan characters. • Design a game design document, including title, genre, game type, description, rules, design of levels, script, game mechanics, and goals. • Select a platform for developing the game. • Select a game engine, such as Unity, Unreal Engine, Godot, Defold, Solar2D, and GameMaker. • Create assets and incorporate them in a game, including art and text, sound, scripting, animations, and User Interface/UI components. • Explain the process of game testing and release the game after it has been developed, including alpha testing and beta testing.			
Work-Based Learning: **Career Coaching, Job Shadowing**	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance**	**Career Ready Practices** CRP 1,2,4,7,10,11,12 **Cluster Standards** AR 1,5,6 IT 1,3,4,11,12	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7

Third Quarter Driving Question: How are designs tested and evaluated? Project #2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
			• Presentations • Teacher/Mentor Observation Checklist	ST 5,6 **Pathway Standards** AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,10,11 **Math** **Science**

Fourth Quarter Driving Question: How are designs tested and evaluated? Project #2 (continued): TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Digital Tools and Software **Digital Imagery and Visual Design** **Website Development** **Video and Audio Production** **2D and 3D Animation** **Video Game Design**	• How are digital imagery projects, websites, video and audio productions animation projects, and video games designed, created and edited? • How are the principles of design applied to digital imagery projects, websites, video and audio productions, animation projects, and video games?	• Select appropriate software for a digital media project, including digital imagery, websites, video and audio productions, animation projects, and video games. • Apply principles of design to a digital media project. • Create and manipulate digital images, and graphics, digital video, and digital audio using a variety of techniques and software applications. • Analyze options and costs for a digital media project. • Apply project management principles to create professional quality digital media projects.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 1,2,3,4 AR-PRT 2 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6 **Math** **Science**
Digital Tools and Software: **Bringing It Into Focus**	• What area of Animation and Game Design: Media Technology will be the focus area for Level 4?	• Determine which area(s) of Animation and Game Design: Media Technology will be the focus of study for Level 4. • Determine opportunities for collaboration within the Media Technology Design concentrations. • Determine opportunities for collaboration with students in other concentrations.	**Written** • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 1,2,3,4 AR-PRT 2 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6 **Math** **Science**
Work-Based Learning:	• What can be learned from Animation and Game	• Participate in Career Coaching process.	**Written**	**Career Ready Practices** CRP 1,2,4,7,10,11,12	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7

Fourth Quarter Driving Question: How are designs tested and evaluated? Project #2 (continued): TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Career Coaching, Job Shadowing	Design: Media Technology professionals?	• Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	• Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist		11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,5,6 IT 1,3,4,11,12 ST 5,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,10,11
					Math
					Science

4 STEAM High School
Animation and Game Design: Media Technology Concentration
Course Syllabus
Level 4

Concentration Overview

This concentration is designed to prepare students for entry level careers or further education and training in professions that use visual art, digital media, and Web-based tools and materials as the primary means of communication and expression. The program will support students as they learn to design and edit many forms of digital media. Students will develop skills in both visual art concepts as well as new and emerging digital processes in multiple types of media for multiple applications, including digital photography, digital image editing, graphic design, website design, video and audio production and post-production, 2D and 3D computer animation, and innovative video game design. Students will apply the fundamentals of design to create digital environments, and explore a range of media production principles in color manipulation, and audio and video editing. After working with multiple digital media applications, students will have the opportunity to focus their learning and specialize in a particular area of interest. In collaboration with students in the other STEAM concentrations, especially the Entertainment Engineering concentration, students will apply design and production techniques to create quality digital media projects that communicate complex concepts and address authentic questions in their community, Students will demonstrate clear and accurate communication skills, leadership and collaboration skills and an awareness of issues around diversity, professional ethics, and environmental responsibility. Students will also learn about cyber safety and be able to make informed decisions about their behaviors and the risks they take when using the internet and mobile technologies. Students will utilize the latest digital technology tools, such as Adobe Creative Cloud, Avid Pro Tools, Autodesk video and gaming software, gaming engines, and open-source software for multiple digital media applications. As they continue through the concentration, students will have the opportunity to earn micro credentials in digital applications, such as Adobe Certified Associate (ACA), App Development with Swift Certification, Avid Pro Tools Certifications, AWS Certified Cloud Practitioner, Certified Internet Web (CIW) Certifications, and Microsoft 365 Certifications to add to interactive digital portfolios of their work.

Course Description

This final course of the concentration is designed for students to build their technical skill sets through in-depth exploration of a specific focus area. Students will have the opportunity to pursue further application and study of the technologies and tools in digital imagery and visual design, website development, video and audio production and postproduction, 2D and 3D modeling and animation, or video game design. Within each focus area, students will design and create multimedia and web-based projects that address a need or answer a question. Students will be strongly encouraged to collaborate with students from other focus areas and other concentrations, as well as with industry professional through work-based internships. Students will manage the production workflow including planning, production and post production and will understand the importance of collaboration and teamwork. Students will continue to enhance their skills in reading, writing, computing, communication, and critical thinking and apply them to the Animation and Game Design: Media Technology environment. Students will complete and submit applications for career and education opportunities in the Animation and Game Design: Media Technology field. Students will also complete requirements for any appropriate credentials. Students will complete and share interactive digital portfolios of their work, including professional resumes.

All students will engage in project-based learning at a minimum of two projects each year. Intrinsic to project-based learning is examining a driving question or identifying a problem by articulating what is already known, and what students need to know to answer the question. Students are guided to develop and execute a plan culminating in a presentation demonstrating their response to the initial question or problem. This process concludes with self-reflection regarding their learning. As such, learning happens during the process of completing a project and not solely as a final activity to demonstrate what has been learned. In this level of the concentration, projects will focus on applying a variety of digital technologies appropriate to the chosen focus area and creating a plan future growth. Projects focusing on application of design concepts and use of digital tools to create products within the focus area and meet an authentic need will be key.

Work-Based Learning

All of the instruction for this course will be project-based where students will be developing, planning, executing and presenting authentic Animation and Game Design: Media Technology projects based on community needs. Students will be connected with working Animation and Game Design: Media Technology professionals through field trips, job shadowing and Career Coaching, leading to opportunities for direct job training and real-world

experience. Students will create and maintain digital portfolios of their experiences to document the development of their skills, including professional resumes.

Additional Learning Opportunities

- **Micro-credentials:** Students may pursue learning experiences and credentials depending on the requirements of the project that they are involved in. Some examples for this concentration include, but are not limited to:
    - Adobe Certified Associate (ACA)
    - App Development with Swift Certification
    - Avid Pro Tools Certifications
    - AWS Certified Cloud Practitioner
    - Certified Internet Web (CIW) Certifications
    - IC3 Digital Literacy Certifications
    - Microsoft 365 Fundamentals Certification
    - Microsoft Office Specialist Associate (Office 365 and Office 2019)
    - Other relevant certifications as they become available through industry collaborations, teacher certifications and student interest.
- **Summer Bridge Enrichment:** Students will have the opportunity to participate in cross-curricular Summer Bridge programs to enhance and enrich their skills. Students will explore and create solutions that address authentic needs in the school and wider community with the involvement of local industry professionals. Students will build on skills learned during the school year to work collaboratively with students from other concentrations and programs.

Pre-Requisites

Animation and Game Design: Media Technology Levels 1, 2, and 3

Course Objectives

Upon completion of this course students will know and be able to:

1. Complete and submit applications for employment, education and training in the Animation and Game Design: Media Technology field.
2. Demonstrate the skills that enhance employability and success in the workplace.
3. Explain and comply with the guidelines and regulations that affect the use of digital media.
4. Apply the basic principles of design to digital multimedia projects.
5. Demonstrate the components of project management in the development of digital multimedia projects.
6. Demonstrate good digital citizenship and adherence to rules for internet safety.
7. Demonstrate basic technical and design skills in digital photography, digital imagery design, website development, video and audio production and postproduction, 2D and 3D models and animations, and video game design.
8. Demonstrate advanced technical and design skills in one focus area of Animation and Game Design: Media Technology.

Integrated High School Academics

N/A

Concurrent College Enrollment

TBD

Equipment and Supplies

- **School will provide:** All tools, technology, equipment and supplies to complete projects
- **Student will provide:** N/A

Textbook

TBD

Grading

10% Research and planning for current projects
10% Journal
80% Projects, Presentations, Participation and Performance

Additional Course Policies

- Meet all deadlines and be on time. Meeting deadlines and being on time are a major part of being a professional.
- Produce their best work, including being prepared for presentations.
- Participate in class including contributing to discussions and critiquing their own and others' work, as well as diligently working on their own projects.
- Seek help when needed.
- Be attentive, ask questions if they do not understand something, and offer their opinions.
- Use provided software platforms for preparing and sharing all work.
- Give credit and use proper citations for all research and project ideas.

Course Calendar

Quarter	Driving Question Project	Units of Study
1	**How will I achieve my career goals?** **Project #1: TBD**	• Careers in Animation and Game Design: Media Technology • Communication and Employability Skills • Professional Ethics in Animation and Game Design: Media Technology • Project Management in Animation and Game Design: Media Technology • Digital Tools and Software: Focus Area • Work-Based Learning: Career Coaching, Job Shadowing
2		• Digital Tools and Software: Focus Area • Work-Based Learning: Internships
3	**How are successful designs created?** **Project #2: TBD**	• Digital Tools and Software: Focus Area • Work-Based Learning: Career Coaching, Job Shadowing
4		• Digital Tools and Software: Focus Area • Work-Based Learning: Internships

4

STEAM High School
Animation and Game Design: Media Technology Concentration
Scope and Sequence
Level 4

First Quarter
Driving Question: How will I achieve my career goals?
Project #1: TBD

Unit	Key Questions	Key Learning Targets (Students will know and be able to:)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Career and Post-Secondary Education Applications	• What different careers are available in Animation and Game Design: Media Technology and what types of education and training do they require?	• Research different institutions that offer post-secondary education and training Animation and Game Design: Media Technology careers. • Research different opportunities that offer post-secondary employment in Animation and Game Design: Media Technology. • Complete applications for post-secondary employment and/or education opportunities.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio • Completed Applications **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11 **Cluster Standards** AR 1,3,5 IT 1,5,6,11,12 ST 5,6 **Pathway Standards** AR-AV 1 AR-VIS 1	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7 **Arts** MA 11 **Math** **Science**
Communication and Employability Skills	• What is the importance of good communication? • What does it mean to be a professional? • What is the importance of critical thinking to solving problems? • What is the importance of teamwork? • What are some important social issues of concern in the workplace?	• Present written and oral communication in a clear, concise, and effective manner. • Describe and demonstrate professional standards for working in the Animation and Game Design: Media Technology field, including dependability, positive attitude, work ethic, flexibility, physical and mental resilience. • Demonstrate critical thinking in troubleshooting problems and solutions. • Work effectively in a team environment as both team member and team leader. • Resolve conflicts with team members and team leaders. • Research the requirements for membership in professional organizations and trade unions. • Demonstrate time-management skills, reliability and responsibility in performing tasks.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,9,11,12 **Cluster Standards** AR 1,3 IT 1,3 ST 5,6 **Pathway Standards** AR-AV 1 ST-ET 1,2,6	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7 **Arts** MA 11 **Math** **Science**

First Quarter Driving Question: How will I achieve my career goals? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Demonstrate an awareness of cultural diversity and respect for differences in the workplace. • Recognize and address social issues of concern in the workplace.			
Workplace Safety **OSHA 10 Certification**	• What are the causes and consequences of the most common types of workplace incidents? • What is the role of the OSHA in job-site safety?	• Describe the causes and consequences of the most common types of workplace incidents. • Explain and demonstrate how to recognize and avoid workplace hazards. • Explain the role of the OSHA in job-site safety. • Obtain OSHA 10 Certification. • Describe common environmental hazards and how to respond to them. • Dispose of hazardous materials and wastes appropriately. • Identify fire hazards and describe basic firefighting procedures. • Describe how to maintain healthy business practices during an infectious disease outbreak like COVID-19.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,3,4,5,8,11,12	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 2 IT 1,4 ST 3,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards ST-ET 1,2,6	**CSDF** 9-12.IC.1,7 9-12.DL.1,2,4,5,6,7
					Arts MA 11
					Math
					Science
Professional Ethics in Animation and Game Design: Media Technology	• What are the guidelines and regulations that affect the use of digital media?	• Demonstrate ethical use of Internet and online resources, including citation of sources. • Explain intellectual property laws, including copyright, trademarks, and patents and consequences of violating each type of law. • Comply with copyright laws when creating digital media projects. • Explain when copyrighted material can be used under Fair Use guidelines. • Comply with licensing agreements pertaining to software usage.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,5,8,9,11,12	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 3,4 IT 1,4,5,8 ST 6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-WD 1,10 ST-ET 4	**CSDF** 9-12.IC.1,2,3,4,5,7 9-12.NSD.2 9-12.CY.1,2,3 9-12.DL.1,2,4,5,6,7
					Arts MA 8,9,10,11
					Math
					Science

First Quarter Driving Question: How will I achieve my career goals? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Project Management in Animation and Game Design: Media Technology	• What are the components of project management? • Why are planning and time-management skills crucial to completing a project? • What takes place during each phase of project management? • How can giving and receiving constructive feedback improve project workflow?	• Explain the components of project management: initiation, planning, execution, performance and monitoring, and close. • Explain the financial components of project management, including accounting practices, inventory, invoicing, and payroll. • Demonstrate planning and scheduling skills in completing a project. • Initiate a project, including identifying the purpose, audience, and audience needs for design plans. • Develop a plan for a media project and identify equipment and resources. • Execute, monitor and control a project along its timeline and make suggested revisions until completion of the project. • Close a project, including identifying lessons learned. • Give and receive constructive feedback that is goal-referenced, tangible and transparent, actionable, user-friendly, timely, ongoing, and consistent.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,9,11,12	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1 IT 1,3 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards AR-AV 1 AR-PRT 1,2 IT-PRG 1,2,3 IT-WD 3 ST-ET 3	**CSDF** 9-12.IC.7 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,9
					Math
					Science
Focus Area	• What area of digital media will be the focus area of concentration for Level 4? • How are digital media projects designed, created, edited and published? • How are the principles of design applied to digital media projects?	• Determine which area(s) will be the focus of study for Level 4. • Determine opportunities for collaboration within and beyond the Animation and Game Design: Media Technology concentration. • Select appropriate software for a digital media project. • Apply principles of design to a digital media project. • Create and manipulate digital media using a variety of techniques and software applications. • Analyze options and costs for a digital media project. • Apply project management principles to create professional quality digital media projects.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,3,4 AR-PRT 2 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
			Written	**Career Ready Practices**	**ELA**

First Quarter Driving Question: How will I achieve my career goals? Project #1: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Work-Based Learning: **Career Coaching, Job Shadowing**	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	• Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	CRP 1,2,4,7,10,11,12	11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,5,6 IT 1,3,4,11,12 ST 5,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,10,11
					Math
					Science

Second Quarter Driving Question: How will I achieve my career goals? Project #1 (continued): TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Focus Area	• How are digital media projects designed, created, edited and published? • How are the principles of design applied to digital media projects?	• Determine opportunities for collaboration within and beyond the Animation and Game Design: Media Technology concentration. • Select appropriate software for a digital media project. • Apply principles of design to a digital media project. • Create and manipulate digital media using a variety of techniques and software applications. • Analyze options and costs for a digital media project. • Apply project management principles to create professional quality digital media projects.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,3,4 AR-PRT 2 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Work-Based Learning: **Internship**	• How does an employee convey professionalism in the workplace? • Why are internships necessary? • How does an internship experience contribute to a professional portfolio? • What are areas of improvement and challenge during the internship experience?	• Apply job search techniques to seek out, evaluate and obtain internship opportunities. • Communicate with industry/potential employers through the internship experience. • Apply learned knowledge and skills to workplace situations. • Explain the importance of professionalism and ethics in the workplace. • Comply with workplace policies and regulations. • Communicate effectively both verbally and in writing. • Explain the importance of being prompt, being able to take directions and being motivated to accomplish assigned tasks. • Analyze and resolve problems that arise in completing assigned tasks.	**Written** • Self-Assessment • Reflection Summary: Internship Experience • Professional Portfolio • Employability Profile **Performance** • Internship Checklist • Employer/Mentor Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,7,10,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,5,6 IT 1,3,4,11,12 ST 5,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,10,11
					Math
					Science

Third Quarter Driving Question: How are successful designs created? Project #2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Focus Area	• How are digital media projects designed, created, edited and published? • How are the principles of design applied to digital media projects?	• Determine opportunities for collaboration within and beyond the Animation and Game Design: Media Technology concentration. • Select appropriate software for a digital media project. • Apply principles of design to a digital media project. • Create and manipulate digital media using a variety of techniques and software applications. • Analyze options and costs for a digital media project. • Apply project management principles to create professional quality digital media projects.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,3,4 AR-PRT 2 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Work-Based Learning: **Career Coaching, Job Shadowing**	• What can be learned from Animation and Game Design: Media Technology professionals?	• Participate in Career Coaching process. • Participate in Job Shadowing process with local Animation and Game Design: Media Technology professionals.	**Written** • Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio **Performance** • Presentations • Teacher/Mentor Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,10,11,12	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,5,6 IT 1,3,4,11,12 ST 5,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.NSD.2 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,10,11
					Math
					Science

Fourth Quarter Driving Question: How are successful designs created? Project #2 (continued): TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Focus Area	• How are digital media projects designed, created, edited and published? • How are the principles of design applied to digital media projects?	• Determine opportunities for collaboration within and beyond the Media Technology Design concentration. • Select appropriate software for a digital media project. • Apply principles of design to a digital media project. • Create and manipulate digital media using a variety of techniques and software applications. • Analyze options and costs for a digital media project. • Apply project management principles to create professional quality digital media projects.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 1,2,3,4 AR-PRT 2 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Work-Based Learning: **Internship**	• How does an employee convey professionalism in the workplace? • Why are internships necessary? • How does an internship experience contribute to a professional portfolio? • What are areas of improvement and challenge during the internship experience?	• Apply job search techniques to seek out, evaluate and obtain internship opportunities. • Communicate with industry/potential employers through the internship experience. • Apply learned knowledge and skills to workplace situations. • Explain the importance of professionalism and ethics in the workplace. • Comply with workplace policies and regulations. • Communicate effectively both verbally and in writing. • Explain the importance of being prompt, being able to take directions and being motivated to accomplish assigned tasks. • Analyze and resolve problems that arise in completing assigned tasks.	**Written** • Self-Assessment • Reflection Summary: Internship Experience • Professional Portfolio • Employability Profile **Performance** • Internship Checklist • Employer/Mentor Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,7,10,11,12 **Cluster Standards** AR 1,5,6 IT 1,3,4,11,12 ST 5,6 **Pathway Standards** AR-AV 1,3,4 AR-PRT 1,2 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,10,11 **Math** **Science**

4

STEAM High School
Animation and Game Design: Media Technology Concentration
Scope and Sequence
Level 4 Focus Areas

Digital Imagery and Visual Design
Driving Question: How are successful designs created?
Projects #1 and 2: TBD

Unit	Key Questions	Key Learning Targets (Students will know and be able to:)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Digital Design Process	• What are the components of the digital design process?	• Demonstrate knowledge of project management tasks and responsibilities. • Explain the relationship between design criteria and design constraints. • Identify the criteria and constraints associated with a digital design problem and select the most appropriate solution. • Create a project plan to account for the time and resources to complete the project. • Define, design, and complete digital design projects; account for time and resources. • Organize a team and assign specific tasks according to individual strengths. • Conduct a brainstorming exercise (e.g., concept mapping and graphic organizers). • Demonstrate the ability to represent a concept. • Determine the most effective software applications for the digital design problem. • Demonstrate proficiency in the use of tools and techniques in desktop/digital publishing software applications (e.g., layout, text, graphics, color and transparency, and output). • Apply basic usability, readability, and accessibility standards. • Carry out a project plan successfully. • Evaluate the quality, efficiency, and productivity of an existing or proposed design; refine the design accordingly.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 2 AR-PRT 2 AR-VIS 2,3 IT-WD 2,3,4,6 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Promotional Design and Emerging Technologies	• How is digital design use in marketing and promotion? • How are emerging technologies affecting digital design?	• Identify the types of promotional designs used in various industries. • Write a promotional message that appeals to a specified target market. • Use design principles to prepare promotional messages (e.g., slogans and taglines).	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7

Digital Imagery and Visual Design Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Produce designs for the appropriate advertising medium. • Use advertising guidelines to design appropriate sample ads (print, television, and the Internet, etc.) • Explain the various technologies associated with digital design, advertising, and associated industries. • Design and create digital design products suitable for delivery via multiple media options (e.g., smartphones, tablets, and laptops). • Compare and contrast the security and privacy issues associated with different delivery media, particularly in regard to social media. • Explain the effects on design and delivery of copyright and various licensing practices.	• Teacher Observation Checklist	ST 1,6 **Pathway Standards** AR-AV 2 AR-PRT 2 AR-VIS 2,3 IT-WD 2,3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Digital Photography	• How does digital design relate to digital photography?	• Demonstrate proficiency in adjusting the hardware features (e.g., manual settings, shutter speed, and f-stops) of a basic digital single-lens reflex camera (DSLR or digital SLR). • Demonstrate knowledge of editing processes on smartphone devices including editing apps. • Demonstrate understanding of white balance and ISO. • Apply knowledge of lighting in photographic composition, including the three-point lighting concept. • Use various imaging technique, such as high dynamic range, panoramic, long exposure, stop motion, and time lapse, to achieve different effects. • Demonstrate the use of various photography techniques, such as black and white photography, and macro photography. • Create a variety of photos that include appropriate composition, framing, and point-of-view (POV).	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 2 AR-PRT 2 AR-VIS 2,3 IT-WD 2,3,4,6 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
			Written	**Career Ready Practices**	**ELA**

Digital Imagery and Visual Design Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Digital Publishing Operations: **Software Applications, Imaging, and Editing**	• How are software applications used for creating and editing digital designs?	• Demonstrate proficiency in incorporating typographic techniques into a communication design. • Produce a variety of color designs using different color techniques; include process color and spot color. • Prepare output files using prepress operations (e.g., color separation, font management, and file management). • Demonstrate proficiency in the use of a raster-based software applications . • Demonstrate proficiency in the use of a vector-based software applications. • Demonstrate ability to convert vector files to raster files. • Produce multiple projects using a variety of software programs. • Demonstrate the ability to prepare output files. • Demonstrate understanding of and proficiency in the use of formats and modes. • Complete projects using appropriate resolution and screen values (e.g., DPI, LPI, and PPI). • Retouch digital photographs utilize tones, hues, values, etc. • Demonstrate proficiency in digital image manipulation (e.g., compositing, destructive vs. non-destructive editing, masks, and color-correction). • Demonstrate an understanding of kinetic typography. • Design a communication solution that employs animation or motion (e.g., graphics, text, and video) to achieve or enhance the intended message. • Demonstrate proficiency in the use of editing software to create a product featuring special visual effects.	• Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 2 AR-PRT 2 AR-VIS 2,3 IT-WD 2,3,4,6 ST-ET 1,3,5,6	11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Multimedia Projects and Presentations	• How is digital design used to create multimedia	• Create and incorporate multimedia files; add audio, links, images/photos, and video.	**Written** • Research Project	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7

Digital Imagery and Visual Design Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
	projects and presentations?	• Demonstrate the ability to create a multimedia PDF. • Demonstrate proficiency in the use of 2D and 3D animation effects. • Create links in webpages, PDF files, and other documents. • Optimize images for Internet publication. • Incorporate multimedia elements into digitally delivered documents/products. • Generate presentations following accessibility guidelines. • Generate presentations with embedded content.	• Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist		11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2 AR-PRT 2 AR-VIS 2,3 IT-WD 2,3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science

Website Development Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Digital Citizenship	• What are the basic principles of copyright, AUP, and ethical behavior?	• Demonstrate knowledge of standard copyright rules, including copyright for original creations, creative commons license and when to obtain permission for non-original work. • Identify the use and purpose of acceptable use policy (AUP). • Comply to the AUP for your school. • Demonstrate ethical behavior as it relates to an AUP, Intellectual Property, Netiquette, Respecting Privacy, and Anti-Spamming Laws.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** IT-WD 10	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Fundamentals of HTML5	• How are webpages created?	• Explain what is required to develop an HTML document. • Code the foundation for a webpage. Include the element tags DOCTYPE, html, head, title, and body. • Structure the page using semantic and structural elements such as: header, nav, main, section, article, aside, footer, and div. • Explain appropriate file structure and naming conventions. • Use logical file structure to build websites. • Incorporate appropriate naming conventions for website files. • Use the DOCTYPE Declaration. • Develop pages using the DOCTYPE declaration. • Develop webpages with appropriate HTML structure and according to W3C standards that can be validated. • Demonstrate best practice by consistently using lowercase text for all element names. • Properly nest elements. • Use quotes on attribute values.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**

Website Development Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Demonstrate the use of input elements and attributes. • Create pages with tags and attributes at the block level. (html, head, body, style, header, nav, main, section, footer, div) • Create pages with tags and attributes at the inline level. (DOCTYPE, title, h1, h2, h6, p, br, meta,) • Create webpages with text formatting, relative and absolute links, images, lists, and tables (tabular data). • Code special characters such as: © " < > & &mdash. • Demonstrate the use of form, fieldsets, legend, buttons, text fields, checkboxes, radio buttons, and dropdown lists. • Use meta tags for page documentation and search engine optimization (SEO). • Specify page description, keywords, viewport, and author using meta tags. • Declare encoding using meta tags. • Explain principles of search engine optimization.			
Cascading Style Sheets (CSS)	• How are format webpages formatted using CSS?	• Format webpages using CSS. • Modify background properties such as: color and image. • Modify font properties such as: font-family, size, and color. • Modify border properties such as: width, style, and color. • Implement tags, id, & classes to modify an HTML element. • Implement an id selector to modify a single element on the page. • Implement selectors a: link, a:visited, a:active a:hover.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**

Website Development Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Site Planning	• How are websites planned, designed, implemented, and maintained?	• Identify the purpose and audience for a website. • Identify basic principles of website usability, readability, and accessibility. • Identify and follow steps in the website planning and development process. • Design elements that are easy to access, understand, and use. • Plan a website by using sketches, wireframe, or site maps.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Digital Images	• How are digital images used in website design?	• Open, edit, and save an image for effective use on a website. • Crop and resize various images. • Optimize an image. (resize and change resolution for optimal load time) • Enhance an image to improve photo quality. (red eye, autocolor, etc.) • Incorporate a logo and header into webpage. • Incorporate images into a webpage.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 1,2,3,4,5,6,7 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science

Video and Audio Production and Postproduction Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Working in the Video Industry	• What are some critical considerations for preparing video and audio projects?	• Identify the purpose, audience, and audience needs for preparing video and audio projects. • Determine whether content is relevant to the purpose, audience, and audience needs. • Communicate with peers and clients about project plans. • Demonstrate knowledge of basic project management concepts. • Determine the type of intellectual property rights, permissions, and licensing required to use specific content. • Identify when and how to obtain permission to use images, audio ,or footage. • Demonstrate an understanding of key terminology related to digital audio and video. • Demonstrate knowledge of how color is managed in digital video. • Use key terms related to video and audio production and postproduction. • Demonstrate knowledge of basic design principles and best practices employed in the video industry. • Demonstrate knowledge of common animation, visual effects (VFX), and design principles. • Demonstrate knowledge of standard compositing techniques. • Identify general design principles and guidelines for editing video and audio. • Explain various applications for Extended Reality (XR), including Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR). • Describe and demonstrate hardware and software technologies that can be used for XR projects, 360 video and other immersive sensory experiences.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 1,2,3,4 AR-VIS 1,2,3 IT-WD 4 ST-ET 1,3,5,6 AR-AV 1,2,3,4 AR-VIS 1,2,3 IT-WD 4 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Project Setup and Interface	• How can software be set up and utilized for efficient and effective workflow?	• Determine the appropriate software application for a project. • Navigate, organize, and customize the application workspace. • Configure application preferences. • Navigate a project using timeline markers and guides. • Import assets into a project.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7

Video and Audio Production and Postproduction Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Import media from various sources. • Manage assets in project.	• Teacher Observation Checklist	**Pathway Standards** AR-AV 1,2,3,4 AR-VIS 1,2,3 IT-WD 4 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Organizing Video Projects	• How are video and audio projects organized for efficient workflow?	• Manage video and audio tracks. • Manage sequences in a complex project. • Modify basic track visibility and audio levels. • Modify layer visibility using opacity, blending modes, track mattes, and masks.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,3,4 AR-VIS 1,2,3 IT-WD 4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Creating and Modifying Visual and Audio Elements	• How are visual and audio elements modified?	• Create video and audio elements using a variety of tools. • Place images and video into a sequence. • Add and animate titles and modify title properties. • Create superimposed text and shapes in a video sequence. • Use appropriate character settings in a title. • Use appropriate paragraph settings in a title. • Animate title elements. • Trim footage for use in sequences. • Resize clips using a variety of tools.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,3,4 AR-VIS 1,2,3	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10

Video and Audio Production and Postproduction Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Modify and refine clip trims using various methods. • Modify clip settings. • Change the speed or direction of a video clip. • Adjust the audio of a video clip. • Use basic editing techniques and effect presets to manipulate digital audio and video. • Modify video effect settings. • Apply and adjust video motion effects. • Composite video tracks. • Manage audio in a video sequence. • Edit, repair, and improve audio. • Reduce noise and restore audio. • Match loudness across multiple audio files. • Invert, reverse, and silence audio. • Analyze phase, frequency, and amplitude. • Apply effects to audio, including amplitude and compression effects, delay and echo effects, diagnostics effects, filter and equalizer effects, reverb effects, and modulation effects.		IT-WD 4,6 ST-ET 1,3,5,6	9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Publishing Digital Media	• How are video and audio sequences published and exported in multiple formats for various publishing platforms?	• Prepare video and audio sequences for publishing to web, screen, and other digital devices. • Check a project for errors and project specifications. • Export and archive video and audio sequences. • Export a clip, range of frames, or an entire sequence. • Export a single frame. • Archive a project.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 1,2,3,4 AR-VIS 1,2,3 IT-WD 4,6 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**

2D and 3D Animation Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Production Process	• What is a production pipeline?	• Identify the job titles and departments associated with animation production. • Identify the various tools and equipment used to produce 3-D animation. • Explain speed and efficiency concepts. • Describe a production pipeline. • Identify the stages of production. • Create and organize production paperwork into production bibles (guidebooks) and prepare for presentations.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Production Writing for 3-D Animation	• How does a script affect the animation process?	• Describe the job of a scriptwriter. • Identify the elements of a script. • Identify the genre of a story. • Define the characters and setting for a story. • Breakdown a script into production elements (e.g., cast, props).	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Art Direction	• What is the importance of art	• Develop the overall visual appearance of an animation.	**Written** • Research Project	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7

2D and 3D Animation Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
	direction in animation?	• Create moods with style. • Determine the geographic location and time period of a story. • Explain the importance of art direction to the intended message. • Describe the use of color in art direction.	• Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist		11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Character Development	• How are animated characters developed?	• Explain character profiles. • Develop character resumes/profiles. • Develop the look and design for a character that reflects the art direction. • Describe the technical challenges/limitations of a character.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Storyboarding.	• What is the importance of storyboarding to the animation process?	• Explain how storyboards are used during production. • Identify common aspect ratios and demonstrate how to calculate them. • Break down a script into the various camera shots and character actions.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards	**Literacy**

2D and 3D Animation Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Explain of perspective and depth of field. • Sketch a storyboard (including characters). • Use storyboarding software or illustration software.	**Performance** • Class Presentation • Teacher Observation Checklist	AR 1,6 IT 7,11,12 ST 1,6	11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Animatics	• What are animatics?	• Define animatics and explain how they are used during production. • Identify the different types of animatics. • Break down a script into the various camera shots and character actions. • Explain the concept of a working print.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
NURBS and Polygonal Modeling	• How are 3D models created?	• Define and use points, vertices, edges, and polygons. • Define poly-count, primitives, and parametric primitives. • Locate the properties, attributes, and coordinates of an object. • Define non-uniform rational basis splines (NURBS). • Explain the use of splines and generators (e.g., extrude, lathe, sweep).	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7

2D and 3D Animation Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Explain the use of hierarchy. • Define Boolean Objects and Null Objects. • Explain scene management (hiding and un-hiding). • Define and utilize arrays, N-gons, and subdivisions. • Demonstrate basic polygon editing and manipulation. • Demonstrate point management (location). • create polygonal models from points. • Utilize cutting/division tools and extruders. • Define and utilize symmetry, hyper-NURBS, and basic deformers (e.g., bend, twist, melt).	• Teacher Observation Checklist	**Pathway Standards** AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Lighting	• How does lighting affect then animation process?	• Compare and contrast real and 3-D lighting. • Explain 3-point lighting and low-key and high-key lighting. • Use “include/exclude” commands to target light on objects. • Explain and use of negative intensity. • Describe and use the hierarchy of lights, area lights, volumetric lights, radiosity/global illumination, ambient occlusion, and HDRI lighting. • Define how light settings will affect render times.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Character Setup	• How are characters set up for animation?	• Compare and contrast rigging approaches and styles. • Describe the rig as it relates to the model. • Define and demonstrate the use of mesh morphing and skeletal systems. • Describe bone/joint hierarchies and naming conventions. • Define controllers, spline inverse kinematics (IK), kinematic chains, and skins and weights. • Create a visual selector for the rig.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 2,4 AR-VIS 2,3	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10

2D and 3D Animation Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
				IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
3-D Rendering	• How is rendering used in 3D animation?	• Describe processor, hardware, and software rendering techniques. • Determine the final render format. • Describe basic render settings. • Demonstrate title safe, action safe, and render safe. • Select the range of frames to be rendered. • Define and demonstrate global illumination (radiosity) render settings, anti-aliasing, net rendering, and alpha channels. • Render animation as a movie or image sequence. • Compile image sequences into a movie. • Describe the benefits, purpose, and workflow of multi-pass rendering. • Describe the batch render process.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Rigging	• What is the rigging process?	• Define the rigging process and its place in the production pipeline. • Explain forward kinematics versus inverse kinematics. • Define the joint weighting process. • Demonstrate the proper hierarchical structure of goals and nulls to construct effective control objects. • Describe and demonstrate rigging tools. • Prepare a rigged model for animation. • Explain advanced scripting relative to rigging. • Create complex rigs for greater precision and control. • Explain how nondestructive deformers affect animation. • Explain how muscle deformers integrate with a	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts**

2D and 3D Animation Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		character rig. • Describe motion capture rigging. • Determine necessary joint/bone hierarchy for motion capture rigging. • Apply pre-captured motion data to a motion capture rig. • Describe and demonstrate animation transfers from one object or object hierarchy to another.			MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**
Materials, Textures, Mapping, and 3D Painting	• How are textures created?	• Identify texture creation in the production pipeline. • Determine required materials and textures for a model based on production design sheets and reference images. • Explain texturing as a process. • Identify the tools and software used to create materials and textures. • Describe and demonstrate procedural shaders and channels. • Adjust the transparency, luminance, and reflection of a material. • Describe the properties of displacement, bump, and normal maps. • Explain how light and camera angles affect the look of materials. • Explain of the differences between textures and shaders. • Explain methods for material projections, UV mapping, and 3-D painting. • Apply UV coordinates to texture mapping. • Link texture and shade properties to object movement using visual or scripted programming relationships. • Determine the material and texture properties to create. • Select an appropriate style (e.g., realistic, hyper-real, simplified) and color palette. • Determine appropriate image resolution and file format for use in 3-D applications. • Describe material and texture creation techniques and approaches. • Acquire raw texture images from digital stills or scans. • Describe the use and advantages of baking textures. • Determine the appropriate render settings needed for	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12 **Cluster Standards** AR 1,6 IT 7,11,12 ST 1,6 **Pathway Standards** AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7 **CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7 **Arts** MA 1,2,3,4,5,6,7,8,9,10,11 **Math** **Science**

2D and 3D Animation Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		baked textures. • Demonstrate texture baking procedures. • Export models with baked textures. • Identify available 3-D paint programs. • Apply a painted image map to a model.			
Morphing	• How is morphing used in animation?	• Define morphing as it relates to animation. • Utilize morphing tools and model meshes. • Define the model area to be morphed. • Create morph target points. • Explain and demonstrate the use of controllers and relational morphs and rotational morphs. • Describe key frame animation and morph tags.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Facial Animation	• Why is facial animation important?	• Demonstrate animation-related facial morphing techniques. • Demonstrate phoneme-viseme principles for lip synchronization. • Apply facial expression animation to complement lip synchronization. • Break down a script into a sound chart. • Create a set of controls for each sound and expression.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math

2D and 3D Animation Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
					Science
Motion Capture Systems	• What is motion capture and how is it used in animation?	• Describe the process of motion capture for 3-D production. • Define the role of a motion capture technician. • Describe optical, magnetic, and mechanical systems. • Describe software-based or simulated motion capture systems. • Explain the motion capture production pipeline.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Animation Behaviors and Scripting	• How are behaviors used in animation?	• Determine use of behaviors and automated animation. • Apply behavior to an object. • Apply multiple behaviors using node or visual systems. • Use object-oriented programming language to create scripts. • Utilize the scripting console and commands.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
			Written	**Career Ready Practices**	**ELA**

2D and 3D Animation Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Particle Systems	• What are particle systems used for?	• Explain particle emitters and prepare objects to be emitted. • Determine the direction of emission and coordinate. • Determine birthrate and lifetime. • Determine scale, speed, and rotation. • Use animated particles. • Create smoke, fire, and sparks using emitters and materials. • Apply dynamics to an emitter, including wind/gravity. • Use of key frame animation or triggers.	• Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	CRP 1,2,4,6,8,11,12	11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Dynamics (Physics)	• How are physics principles applied in animation?	• Explain basic physics principles (e.g., mass, velocity, collision). • Determine when to use physics instead of key frame animation. • Apply physics tools and commands to models in a simulation. • Describe rigid and soft bodies. • Describe forces (e.g., gravity, drag, wind). • Explain collision detection.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Motion Graphics	• How are motion graphics used in animation?	• Define 3-D animated motion graphics. • Describe motion graphics tools and techniques. • Explain integrated dynamics to simulate gravitational	**Written** • Research Project • Project	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6

2D and 3D Animation Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		and collision effects. • Demonstrate the integration of standard animation techniques to drive motion graphics elements based on node-based visual programming.	• Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist		11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Post-Production	• What is involved in the post-production of an animation project?	• Import composited video into the timeline. • Import final audio into the timeline. • Edit video using the animatic as a reference. • Export a video for use in various media formats.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,5,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science

Video Game Design Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
Culture and Purpose of Games	• What is the purpose of video games? • How has the video game industry affected both users and society?	• Analyze the elements of a successful game. • Explain the effects of games on the user. • Explain the effects of games on society. • Identify the purposes of games. • Define the culture of a game.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,4 AR-VIS 1,2,3	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Applying Ethics and Regulations to Game Design	• What are the ethics of game design?	• Investigate accessibility guidelines for game platforms. • Adhere to intellectual property laws. • Interpret the Entertainment Software Rating Board (ESRB) rating system. • Explain end user license agreements (EULA). • Summarize the security concerns of the user and developer.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards IT-WD 1,10	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Game Design		• Describe the design process from conception to production.	**Written** • Research Project	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7

Video Game Design Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
	• What are the components of the game design process?	• Explain the iterative nature of game design through the different stages of design iterations including pre-alpha, alpha, beta, release candidate, going gold and support. • Create a storyboard describing the essential elements, plot, flow, and functions of the game/simulation. • Create a design specification document to include interface and delivery choices, rules of play, navigation functionality, scoring, media choices, start and end of play, special features, and development team credits. • Research, compare and categorize the different gaming genres. • Describe the general principles of storytelling for game design. • Describe common character archetypes and character designs. • Design character prototypes to physically match archetype. • Develop a game design document, including a game strategy overview, character overview, storyboard overview, rules of play and multi-player options. • Explain the process of creating and designing player choice and other game designer strategy considerations. • Create and design the game flow as it relates to story and plot. • Describe common use of mission design and campaigns. • Describe common design elements introducing skill, luck and combinations including escalating challenges to games. • Identify common design elements used to vary weapons, characters and tools. • Discuss the incorporation of risk reward and adaptive challenges (AI). • Explain the use of inventory systems in game design. • Identify the components of a game engine. • Plan a timeline for production.	• Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist		11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 2,4 AR-VIS 2,3 IT-PRG 2,3 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science

Video Game Design Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Create a flow chart for game progression.			
Game Programming	• How is programming used in creating video games?	• Plan program design using a graphical representation or pseudo code to represent the structure in a program or subroutine. • Code programs in high-level languages for game/simulation applications. • Write programs according to recognized programming standards.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,4 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Multi-User Game Programming	• How are multiplayer games created and programmed?	• Describe the various types of multiplayer game architectures. • Identify networking and server design requirements for multi-player games. • Identify various types of operating systems/environments for different computer hardware platforms. • Create a window to run a game. • Describe and use appropriate game libraries to run a windowed game.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,4 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Audio/Sound Effects			**Written**	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9

Video Game Design Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
	• How are audio effects added to video games?	• Operate digital recording decks and other digital storage devices. • Edit, cut, erase, and insert sound utilizing various digital production techniques. • Perform digital noise reduction and noise extraction via spectral display. • Set-up and configure a computer for audio applications. • Record audio directly to the digital audio workstation. • Design and edit audio using a waveform editor. • Mix audio. • Demonstrate skill in using audio effects and plug-ins. • Transfer audio files between various audio software applications. • Export finished audio. • Use MIDI in a game/simulation project, including exporting MIDI soundtracks and sound effects. • Apply MIDI file to an object or game/simulation element. • Incorporate audio assets into game/simulation engine.	• Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist		11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,4 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science
Video/Special Effects	• How are video and special effects added to video games?	• Use current industry standard production video equipment. • Operate camera in studio and location (field) production environments. • Explain digital video storage concepts and digital storage media. • Operate digital recording decks, and other digital storage devices. • Identify and select microphones for production needs. • Determine appropriate lighting needs for production settings. • Identify location and studio lighting types, method of use and application. • Set-up and configure a computer for video applications.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,4 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math

Video Game Design Driving Question: How are successful designs created? Projects #1 and 2: TBD					
Unit	**Key Questions**	**Key Learning Targets** **(Students will know and be able to:)**	**Assessment Evidence of Learning**	**CCTC Standards**	**NYS Standards**
		• Use a video workstation to edit, cut, erase, and insert video utilizing various digital production techniques. • Record video directly to the digital video workstation. • Prepare a video project for final compositing and export. • Transfer video files between various video software applications. • Export finished video. • Incorporate video assets into game/simulation engine.			**Science**
Post-Production: **Quality Assurance, Publication, and Marketing**	• What is involved in the post-production phase of video game creation?	• Perform alpha and beta testing. • Examine beta testing feedback/results. • Identify ways that games are published. • Explain digital rights management (DRM). • Define porting. • Identify marketing options. • Evaluate the influence of marketing on the success of a game. • Create marketing materials. • Research economic principles as they relate to the marketing of games.	**Written** • Research Project • Project • Self-Assessment • Professional Portfolio **Performance** • Class Presentation • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,6,8,11,12	**ELA** 11-12R 1,2,3,4,7,8,9 11-12W 2,3,4,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards AR 1,6 IT 7,11,12 ST 1,6	**Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,3,4,5,6,7
				Pathway Standards AR-AV 1,2,4 AR-VIS 2,3 IT-PRG 2,3,6,7 IT-WD 3,4,6 ST-ET 1,3,5,6	**CSDF** 9-12.IC.1,7 9-12.CT.6,7,8,9,10 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5,6,7
					Arts MA 1,2,3,4,5,6,7,8,9,10,11
					Math
					Science

CCTC: Common Career and Technical Core Standards for Animation and Game Design: Media Technology

Career Ready Practices

1	Act as a responsible and contributing citizen and employee.
2	Apply appropriate academic and technical skills.
3	Attend to personal health and financial well-being.
4	Communicate clearly and effectively and with reason.
5	Consider the environmental, social, and economic impacts of decisions.
6	Demonstrate creativity and innovation.
7	Employ valid and reliable research strategies.
8	Utilize critical thinking to make sense of problems and persevere in solving them.
9	Model integrity, ethical leadership, and effective management.
10	Plan education and career paths aligned to personal goals.
11	Use technology to enhance productivity.
12	Work productively in teams while using cultural global competence.

Full Text: Career Ready Practices

Career Cluster and Pathway Standards

Area	Number	Standard
Career Cluster: **Arts, A/V Technology & Communications**	**AR 1**	Analyze the interdependence of the technical and artistic elements of various careers within the Arts, A/V Technology & Communications Career Cluster.
	AR 2	Analyze the importance of health, safety and environmental management systems, policies, and procedures common in arts, audio/video technology and communications activities and facilities.
	AR 3	Analyze the lifestyle implications and physical demands required in the arts, audio/visual technology, and communications workplace.
	AR 4	Analyze the legal and ethical responsibilities required in the arts, audio/visual technology, and communications workplace.
	AR 5	Describe the career opportunities and means to achieve those opportunities in each of the Arts, A/V Technology & Communications Career Pathways.
	AR 6	Evaluate technological advancements and tools that are essential to occupations within the Arts, A/V Technology & Communications Career Cluster.
Career Pathway: **A/V Technology and Film**	**AR-AV 1**	Describe the history, terminology, occupations and value of audio, video, and film technology.
	AR-AV 2	Demonstrate the use of basic tools and equipment used in audio, video, and film production.
	AR-AV 3	Demonstrate technical support skills for audio, video, and film productions.
	AR-AV 4	Design an audio, video and/or film production.
Career Pathway: **Printing Technology**	**AR-PRT 1**	Manage the printing process including customer service and sales, scheduling, production, and quality control to deliver products that meet customer needs and expectations.
	AR-PRT 2	Demonstrate the production of various print, multimedia, or digital media products.
	AR-PRT 3	Perform finishing and distribution operations related to the printing process.
Career Pathway: **Visual Arts**	**AR-VIS 1**	Describe the history and evolution of the visual arts and its role in and impact on society.
	AR-VIS 2	Analyze how the application of visual arts elements and principles of design communicate and express ideas.
	AR-VIS 3	Analyze and create two and three-dimensional art forms using various media.
Career Cluster: **Information Technology**	**IT 01**	Demonstrate effective professional communication skills and practices that enable positive customer relationships.
	IT 02	Use product or service design processes and guidelines to produce a quality information technology (IT) product or service.
	IT 03	Demonstrate the use of cross-functional teams in achieving IT project goals.
	IT 04	Demonstrate positive cyber citizenry by applying industry accepted ethical practices and behaviors.
	IT 05	Explain the implications of IT on business development.
	IT 06	Describe trends in emerging and evolving computer technologies and their influence on IT practices.

Area	Number	Standard
	IT 07	Perform standard computer backup and restore procedures to protect IT information.
	IT 08	Recognize and analyze potential IT security threats to develop and maintain security requirements.
	IT 09	Describe quality assurance practices and methods employed in producing and providing quality IT products and services.
	IT 10	Describe the use of computer forensics to prevent and solve information technology crimes and security breaches.
	IT 11	Demonstrate knowledge of the hardware components associated with information systems.
	IT 12	Compare key functions and applications of software and determine maintenance strategies for computer systems.
Career Pathway: **Programming and Software Development**	**IT-PRG 01**	Analyze customer software needs and requirements.
	IT-PRG 02	Demonstrate the use of industry standard strategies and project planning to meet customer specifications.
	IT-PRG 03	Analyze system and software requirements to ensure maximum operating efficiency.
	IT-PRG 04	Demonstrate the effective use of software development tools to develop software applications.
	IT-PRG 05	Apply an appropriate software development process to design a software application.
	IT-PRG 06	Program a computer application using the appropriate programming language.
	IT-PRG 07	Demonstrate software testing procedures to ensure quality products.
	IT-PRG 08	Perform quality assurance tasks as part of the software development cycle.
	IT-PRG 09	Perform software maintenance and customer support functions.
	IT-PRG 10	Design, create and maintain a database.
Career Pathway: **Web and Digital Communications**	**IT-WD 01**	Analyze customer requirements to design and develop a Web or digital communication product.
	IT-WD 02	Apply the design and development process to produce user-focused Web and digital communications solutions.
	IT-WD 03	Write product specifications that define the scope of work aligned to customer requirements.
	IT-WD 04	Demonstrate the effective use of tools for digital communication production, development, and project management.
	IT-WD 05	Develop, administer, and maintain Web applications.
	IT-WD 06	Design, create and publish a digital communication product based on customer needs.
	IT-WD 07	Evaluate the functionality of a digital communication product using industry accepted techniques and metrics.
	IT-WD 08	Implement quality assurance processes to deliver quality digital communication products and services.
	IT-WD 09	Perform maintenance and customer support functions for digital communication products.
	IT-WD 10	Comply with intellectual property laws, copyright laws and ethical practices when creating Web/digital communications.
Career Cluster: **Science, Technology, Engineering and Mathematics**	**ST 1**	Apply engineering skills in a project that requires project management, process control and quality assurance.
	ST 2	Use technology to acquire, manipulate, analyze, and report data.
	ST 3	Describe and follow safety, health and environmental standards related to science, technology, engineering, and mathematics (STEM) workplaces.
	ST 4	Understand the nature and scope of the Science, Technology, Engineering and Mathematics Career Cluster and the role of STEM in society and the economy.
	ST 5	Demonstrate an understanding of the breadth of career opportunities and means to those opportunities in each of the Science, Technology, Engineering and Mathematics Career Pathways.
	ST 6	Demonstrate technical skills needed in a chosen STEM field.
Career Pathway: **Engineering and Technology**	**ST-ET 1**	Use STEM concepts and processes to solve problems involving design and/or production.
	ST-ET 2	Display and communicate STEM information.
	ST-ET 3	Apply processes and concepts for the use of technological tools in STEM.
	ST-ET 4	Apply the knowledge learned in the study of STEM to provide solutions to human and societal problems in an ethical and legal manner.
	ST-ET 5	Apply the elements of the design process.
	ST-ET 6	Apply the knowledge learned in STEM to solve problems.

Full Text:

- Arts, A/V Technology & Communications Cluster and Pathways
- Information Technology Cluster and Pathways
- Science, Technology, Engineering and Mathematics Cluster and Pathways

New York State Standards

NYS ELA Standards

9th-10th Grade Reading Standards (Literary and Informational Text)

Key Ideas and Details	
9-10R1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly/implicitly and make logical inferences; develop questions for deeper understanding and for further exploration. (RI&RL)
9-10R2	Determine one or more themes or central ideas in a text and analyze its development, including how it emerges and is shaped and refined by specific details; objectively and accurately summarize a text. (RI&RL)
9-10R3	Analyze how and why individuals, events, and ideas develop and interact over the course of a text. In literary texts, analyze how complex and/or dynamic characters develop, interact with other characters, advance the plot, or develop a theme. (RL) In informational texts, analyze how the author unfolds an analysis or argument, including the sequence, the introduction and development of ideas, and the connections that exist. (RI)
Craft and Structure	
9-10R4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood. Examine technical or key terms and how language differs across genres. (RI&RL)
9-10R5	In literary texts, consider how varied aspects of structure create meaning and affect the reader. (RL) In informational texts, consider how author's intent influences particular sentences, paragraphs, or sections. (RI)
9-10R6	Analyze how authors employ point of view, perspective, and purpose to shape explicit and implicit messages (e.g., examine rhetorical strategies, literary elements, and devices). (RI&RL)
Integration of Knowledge and Ideas	
9-10R7	Analyze how a subject / content is presented in two or more formats by determining which details are emphasized, altered, or absent in each account. (e.g., analyze the representation of a subject / content or key scene in two different formats, examine the differences between a historical novel and a documentary). (RI&RL)
9-10R8	Delineate and evaluate an argument and specific claims in a text, assessing the validity or fallacy of key statements by examining whether the supporting evidence is relevant and sufficient. (RI&RL)
9-10R9	Choose and develop criteria in order to evaluate the quality of texts. Make connections to other texts, ideas, cultural perspectives, eras, and personal experiences. (RI&RL)

9th-10th Grade Writing Standards

Text Types and Purposes	
9-10W1	Write arguments to support claims that analyze substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
9-10W2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
9-10W3	Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
9-10W4	Create a poem, story, play, art work, or other response to a text, author, theme, or personal experience; demonstrate knowledge and understanding of a variety of techniques and genres. Explain divergences from the original when appropriate.
9-10W5	Draw evidence from literary or informational texts to support analysis, reflection, and research. Apply grade 9/10 Reading standards to both literary and informational text, where applicable.
Research to Build and Present Knowledge	
9-10W6	Conduct research to answer questions, including self-generated questions, or solve a problem; narrow or broaden the inquiry when appropriate. Synthesize multiple sources, demonstrating understanding of the subject under investigation.
9-10W7	Gather relevant information from multiple sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas; avoid plagiarism and follow a standard format for citation.

9th-10th Grade Speaking and Listening

Comprehension and Collaboration	
9-10SL1	Initiate and participate effectively in a range of collaborative discussions with diverse partners on complex topics, texts, and issues; express ideas clearly and persuasively, and build on those of others.
9-10SL2	Integrate multiple sources of information presented in diverse formats (e.g., including visual, quantitative, and oral), evaluating the credibility, accuracy, and relevance of each source.
9-10SL3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric; identify any fallacious reasoning or exaggerated or distorted evidence.
Presentation of Knowledge and Ideas	
9-10SL4	Present claims, findings, and supporting evidence clearly, concisely, and logically; organization, development, substance, and style are appropriate to task, purpose, and audience.
9-10SL5	Make strategic use of digital media and/or visual displays in presentations to enhance understanding of findings, reasoning, and evidence, and to add elements of interest to engage the audience.
9-10SL6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

9th-10th Grade Language Standards

Conventions of Academic English	
Anchor L1	Demonstrate command of the conventions of academic English grammar and usage when writing or speaking*.
Anchor L2	Demonstrate command of the conventions of academic English capitalization, punctuation, and spelling when writing*
Knowledge of Language	
9-10L3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.
Vocabulary Acquisition and Use	
9-10L4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases, choosing flexibly from a range of strategies.
9-10L5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
9-10L6	Acquire and accurately use general academic and content-specific words and phrases, sufficient for reading, writing, speaking, and listening; demonstrate independence in applying vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Core Conventions Skills for Grades 9-12

- Use parallel structure.
- Use various types of phrases and clauses to add variety and interest to writing or presentations.
- Understand that usage is a matter of convention that can change over time.
- Resolve issues of complex or contested usage, consulting references as needed.

Core Punctuation and Spelling Skills for Grades 9-12

- Use punctuation (commas, parentheses, dashes, hyphens) to clarify and enhance writing.
- Use a semicolon to link two or more closely related independent clauses.
- Use a colon to introduce a list or quotation.

11th-12th Grade Reading Standards (Literary and Informational Text)

Key Ideas and Details	
11-12R1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly/implicitly and make logical inferences, including determining where the text is ambiguous; develop questions for deeper understanding and for further exploration. (RI&RL)
11-12R2	Determine two or more themes or central ideas in a text and analyze their development, including how they emerge and are shaped and refined by specific details; objectively and accurately summarize a complex text. (RI&RL)
11-12R3	In literary texts, analyze the impact of author's choices. (RL) In informational texts, analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop. (RI)
Craft and Structure	
11-12R4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood, including words with multiple meanings. Analyze how an author uses and refines the meaning of technical or key term(s) over the course of a text. (RI&RL)
11-12R5	In literary texts, analyze how varied aspects of structure create meaning and affect the reader. (RL) In informational texts, analyze the impact and evaluate the effect structure has on exposition or argument in terms of clarity, persuasive/rhetorical technique, and audience appeal. (RI)
11-12R6	Analyze how authors employ point of view, perspective, and purpose, to shape explicit and implicit messages (e.g., persuasiveness, aesthetic quality, satire, sarcasm, irony, or understatement). (RI&RL)
Integration of Knowledge and Ideas	
11-12R7	In literary texts, analyze multiple adaptations of a source text as presented in different formats (e.g., works of art, graphic novels, music, film, etc.), specifically evaluating how each version interprets the source. (RL) In informational texts, integrate and evaluate sources on the same topic or argument in order to address a question, or solve a problem. (RI)
11-12R8	Delineate and evaluate an argument in applicable texts, applying a lens (e.g. constitutional principles, logical fallacy, legal reasoning, belief systems, codes of ethics, philosophies, etc.) to assess the validity or fallacy of key arguments, determining whether the supporting evidence is relevant and sufficient. (RI&RL)
11-12R9	Choose and develop criteria in order to evaluate the quality of texts. Make connections to other texts, ideas, cultural perspectives, eras, and personal experiences. (RI&RL)

11th-12th Grade Writing Standards

Text Types and Purposes	
11-12W1	Write arguments to support claims that analyze substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
11-12W2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
11-12W3	Write narratives to develop real or imagined experiences or events using effective techniques, well-chosen details, and well-structured event sequences.
11-12W4	Create a poem, story, play, art work, or other response to a text, author, theme, or personal experience; demonstrate knowledge and understanding of a variety of techniques and genres. Explain connections between the original and the created work.
11-12W5	Draw evidence from literary or informational texts to support analysis, reflection, and research. Apply grade 11/12 Reading standards to both literary and informational text, where applicable.
Research to Build and Present Knowledge	
11-12W6	Conduct research through self-generated question, or solve a problem; narrow or broaden the inquiry when appropriate. Synthesize multiple sources, demonstrating understanding and analysis of the subject under investigation.
11-12W7	Gather relevant information from multiple sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas; avoid plagiarism, overreliance on one source, and follow a standard format for citation.

11th-12th Grade Speaking and Listening

Comprehension and Collaboration	
11-12SL1	Initiate and participate effectively in a range of collaborative discussions with diverse partners on complex topics, texts, and issues; express ideas clearly and persuasively, and build on those of others.
11-12SL2	Integrate multiple sources of information presented in diverse formats (e.g., including visual, quantitative, and oral). Evaluate the credibility and accuracy of each source, and note any discrepancies among the data to make informed decisions and solve problems.

11-12SL3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric; assess the premises and connections among ideas, diction, and tone.
Presentation of Knowledge and Ideas	
11-12SL4	Present claims, findings, and supporting evidence, conveying a clear and distinct perspective; alternative or opposing perspectives are addressed; organization, development, substance, and style are appropriate to task, purpose, and audience.
11-12SL5	Make strategic use of digital media and/or visual displays in presentations to enhance understanding of findings, reasoning, and evidence, and to add elements of interest to engage the audience.
11-12SL6	Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate.

11th-12th Grade Language Standards

Conventions of Academic English	
Anchor L1	Demonstrate command of the conventions of academic English grammar and usage when writing or speaking*.
Anchor L2	Demonstrate command of the conventions of academic English capitalization, punctuation, and spelling when writing*
Knowledge of Language	
11-12L3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.
Vocabulary Acquisition and Use	
11-12L4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases, choosing flexibly from a range of strategies.
11-12L5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
11-12L6	Acquire and accurately use general academic and content-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in applying vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Core Conventions Skills for Grades 9-12

- Use parallel structure.
- Use various types of phrases and clauses to add variety and interest to writing or presentations.
- Understand that usage is a matter of convention that can change over time.
- Resolve issues of complex or contested usage, consulting references as needed.

Core Punctuation and Spelling Skills for Grades 9-12

- Use punctuation (commas, parentheses, dashes, hyphens) to clarify and enhance writing.
- Use a semicolon to link two or more closely related independent clauses.
- Use a colon to introduce a list or quotation.

Full Text: New York State Next Generation English Language Arts Learning Standards (nysed.gov)

NYS Literacy Standards: NYS Next Generation 6-12 Literacy Standards in History/Social Studies, Science, and Technical Subjects

Reading Standards for Literacy in Science and Technical Subjects 9-10	
9-10RST 1	Cite specific evidence to support analysis of scientific and technical texts, charts, diagrams, etc. attending to the precise details of the source. Understand and follow a detailed set of directions.
9-10RST 2	Determine the key ideas or conclusions of a source; trace the source's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the source.
9-10RST 3	Analyze how and why scientific ideas and reasoning are developed and modified over the course of a text, source, argument, etc.
9-10RST 4	Determine the meaning of symbols, key terms, and other content-specific words and phrases as they are used in scientific or technical sources; describe how the inclusion of charts, graphs, diagrams, data influence conclusion(s).
9-10RST 5	Describe how the text structures information or ideas into categories or hierarchies, including how the major sections contribute to the whole and to an understanding of the topic.
9-10RST 6	Describe purpose and/or point of view when an author is presenting information, describing a procedure, discussing an experiment, etc.
9-10RST 7	Translate scientific or technical information expressed as written text into visual form (e.g., a table or chart), and translate information expressed visually or mathematically (e.g., in an equation) into words.
9-10RST 8	Assess the extent to which the reasoning and evidence in a source support the author's claim or a recommendation for solving a scientific or technical problem.
9-10RST 9	Compare and contrast findings presented in a source to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.

Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 9-10	
9-10WHST 1	Write arguments focused on discipline-specific content.
9-10WHST 2	Write informative/explanatory text focused on discipline-specific content.
9-10WHST 3	Write narratives to understand an event or topic, appropriate to discipline-specific norms, conventions, and tasks.
9-10WHST 4	Write responses to texts and to events (past and present), ideas, and theories that include personal, cultural, and thematic connections.
9-10WHST 5	Conduct short as well as more sustained research projects to answer a question (including a self-generated question), analyze a topic, or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
9-10WHST 6	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question and the accuracy of each source by applying discipline-specific criteria; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.
9-10WHST 7	Draw evidence from informational texts to support analysis, reflection, and research.

Reading Standards for Literacy in Science and Technical Subjects 11-12	
11-12RST 1	Cite specific evidence to support analysis of scientific and technical texts, charts, diagrams, etc. attending to the precise details of the source, and attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
11-12RST 2	Determine the key ideas or conclusions of a source; summarize complex concepts, processes, or information presented in a source by paraphrasing in precise and accurate terms.
11-12RST 3	Analyze how and why scientific ideas and reasoning are developed and modified over the course of a text, source, argument, etc.; analyze/evaluate the results and conclusions based on explanations in the text.
11-12RST 4	Determine the meaning of symbols, key terms, and other content-specific words and phrases as they are used in scientific or technical sources.
11-12RST 5	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
11-12RST 6	Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
11-12RST 7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
11-12RST 8	Evaluate the data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
11-12RST 9	Compare and contrast findings presented in a source to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.

Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 11-12	
11-12WHST 1	Write arguments focused on discipline-specific content.
11-12WHST 2	Write explanatory and analytical text focused on discipline-specific content and which uses strategies for conveying information like those used in the respective discipline.
11-12WHST 3	Write narratives to understand an event or topic, appropriate to discipline-specific norms, conventions, and tasks.
11-12WHST 4	Write responses to texts and to events (past and present), ideas, and theories that include personal, cultural, and thematic connections.
11-12WHST 5	Conduct short as well as more sustained research projects to answer a question (including a self-generated question), analyze a topic, or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
11-12WHST 6	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience as well as by applying discipline-specific criteria used in the social sciences or sciences; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
11-12WHST 7	Draw evidence from informational texts to support analysis, reflection, and research.

Full Text: New York State Next Generation Learning Standards for Literacy in History/Social Studies, Science and Technical Subjects (nysed.gov)

NYS K-12 Computer Science and Digital Fluency Learning Standards

Subconcept	Standard	
Impacts of Computing		
Society	9-12.IC.1	Evaluate the impact of computing technologies on equity, access, and influence in a global society.
	9-12.IC.2	Debate laws and regulations that impact the development and use of computing technologies and digital information.
Ethics	9-12.IC.3	Debate issues of ethics related to real-world computing technologies.
	9-12.IC.4	Assess personal and societal trade-offs related to computing technologies and data privacy.
	9-12.IC.5	Describe ways that complex computer systems can be designed for inclusivity and to mitigate unintended consequences.
Accessibility	9-12.IC.6	Create accessible computational artifacts that meet standard compliance requirements or otherwise meet the needs of users with disabilities.
Career Paths	9-12.IC.7	Investigate the use of computer science in multiple fields.
Computational Thinking		
Modeling and Simulation	9-12.CT.1	Create a simple digital model that makes predictions of outcomes.
Data Analysis and Visualization	9-12.CT.2	Collect and evaluate data from multiple sources for use in a computational artifact.
	9-12.CT.3	Refine and visualize complex data sets to tell different stories with the same data set.
Abstraction and Decomposition	9-12.CT.4	Implement a program using a combination of student-defined and third-party functions to organize the computation.
	9-12.CT.5	Modify a function or procedure in a program to perform its computation in a different way over the same inputs, while preserving the result of the overall program.
Algorithms and Programming	9-12.CT.6	Demonstrate how at least two classic algorithms work, and analyze the trade-offs related to two or more algorithms for completing the same task.
	9-12.CT.7	Design or remix a program that utilizes a data structure to maintain changes to related pieces of data.
	9-12.CT.8	Develop a program that effectively uses control structures in order to create a computer program for practical intent, personal expression, or to address a societal issue.
	9-12.CT.9	Systematically test and refine programs using a range of test cases, based on anticipating common errors and user behavior.
	9-12.CT.10	Collaboratively design and develop a program or computational artifact for a specific audience and create documentation outlining implementation features to inform collaborators and users.
Network and System Design		
Hardware and Software	9-12.NSD.1	Design a solution to a problem that utilizes embedded systems to automatically gather input from the environment.
	9-12.NSD.2	Explain the levels of interaction existing between the application software, system software, and hardware of a computing system.
	9-12.NSD.3	Develop and communicate multistep troubleshooting strategies others can use to identify and fix problems with computing devices and their components.
Networks and the Internet	9-12.NSD.4	Describe the components and design characteristics that allow data and information to be moved, stored, and referenced over the internet.
	9-12.NSD.5	Describe how emerging technologies are impacting networks and how they are used.
Cybersecurity		
Risks	9-12.CY.1	Determine the types of personal and organizational information and digital resources that an individual may have access to that need to be protected.
Safeguards	9-12.CY.2	Describe physical, digital, and behavioral safeguards that can be employed to protect the confidentiality, integrity, and accessibility of information.
	9-12.CY.3	Explain specific trade-offs when selecting and implementing security recommendations.
	9-12.CY.4	Evaluate applications of cryptographic methods.
Response	9-12.CY.5	Recommend multiple actions to take prior and in response to various types of digital security breaches.
Digital Literacy		
Digital Use	9-12.DL.1	Type proficiently on a keyboard.
	9-12.DL.2	Communicate and work collaboratively with others using digital tools to support individual learning and contribute to the learning of others.
	9-12.DL.4	Independently select advanced digital tools and resources to create, revise, and publish complex digital artifacts or collection of artifacts.
	9-12.DL.5	Transfer knowledge of technology in order to use new and emerging technologies on multiple platforms.
Digital Citizenship	9-12.DL.6	Actively manage digital presence and footprint to reflect an understanding of the permanence and potential consequences of actions in online spaces.
	9-12.DL.7	Design and implement strategies that support safety and security of digital information, personal identity, property, and physical and mental health when operating in the digital world.

Full Text: New York State 9-12 Computer Science and Digital Fluency Standards

NYS Arts Learning Standards for Media Arts

Anchor Standards	
Create	1. Generate and conceptualize artistic ideas and work.
	2. Organize and develop artistic ideas and work.
	3. Refine and complete artistic work.
Produce	4. Select, analyze, and interpret artistic work for presentation.
	5. Develop and refine artistic techniques and work for presentation.
	6. Convey meaning through the presentation of artistic work.
Refine	7. Perceive and analyze artistic work.
	8. Interpret meaning in artistic work.
	9. Apply criteria to evaluate artistic work.
Connect	10. Relate and synthesize knowledge and personal experiences to inspire and inform artistic work.
	11. Investigate ways that artistic work is influenced by societal, cultural, and historical context and, in turn, how artistic ideas shape cultures past, present, and future.

Full Text: NYS Media Arts At-A-Glance

New York State Next Generation Mathematics Learning Standards

Full Text: New York State Next Generation Mathematics Learning Standards

New York State High School Science Learning Standards

Full Text: New York State High School Science Learning Standards