

# *Art of Animation 1*

## COURSE OUTLINE - UC

### **DESCRIPTION:**

This comprehensive program introduces students to animation through theory and hands-on training in art fundamentals, drawing, cartooning, and animation basics. It also includes an introduction to computer graphics imaging. Students will study art theory, composition, color, spatial concepts, rendering and animation, using creativity and imagination to convey ideas and tell a story. Integrated throughout Art of Animation are career technical education standards which include basic academic skills, communication, career planning, technology, problem solving, safety, responsibility, ethics, teamwork, and technical knowledge. Activities in this course include work-based learning that connects students to industry and the local community.

### **INFORMATION:**

PRE-REQUISITE:	None
LENGTH:	One Year
SECTOR:	Arts, Media, and Entertainment
PATHWAY:	Design, Visual, and Media Arts
ARTICULATED:	Yes
UC A-G APPROVAL:	Yes: Visual & Performing Arts (F) – Visual Arts Requirement

### **O\*NET SOC CODES:**

27-1014.00	Multi-media Artists and Animators
27-1024.00	Graphic Designers

<b>Orientation</b>
<ul style="list-style-type: none"> <li>A. Introduce the course and facilities.</li> <li>B. Discuss the syllabus and major objectives.</li> <li>C. Explain applicable classroom management procedures, the ROP Student Rules of Conduct, and any operational guidelines.</li> <li>D. Review instructor/student expectations.</li> <li>E. Explain enrollment and attendance requirements and procedures.</li> <li>F. Review grading and student evaluation procedures.</li> <li>G. Discuss the community classroom aspect of the program, if applicable.</li> <li>H. Discuss the “next steps” related to additional education, training, and employment.</li> <li>I. Review classroom safety, emergency, and disaster procedures.</li> </ul>
<b>1. Communication Skills</b>
<ul style="list-style-type: none"> <li>A. Demonstrate positive verbal communication skills using appropriate vocabulary, demeanor, and vocal tone in the classroom and/or worksite.</li> <li>B. Read and interpret written information and directions.</li> <li>C. Practice various forms of written communication appropriate to the occupation.</li> <li>D. Practice positive body language skills.</li> <li>E. Practice professional verbal skills for resolving a conflict.</li> <li>F. Demonstrate active listening skills including techniques for checking for understanding, and for obtaining clarification of directions.</li> </ul>
<b>2. Interpersonal Skills</b>
<ul style="list-style-type: none"> <li>A. Demonstrate positive teamwork skills by contributing to a group effort.</li> <li>B. Practice the importance of diversity awareness and sensitivity in the workplace.</li> <li>C. Define sexual harassment in the workplace and identify the employee’s role and responsibility.</li> <li>D. Practice participation skills.</li> <li>E. Identify different personality types and strategies for working effectively with each type.</li> <li>F. Practice business and social etiquette skills appropriate to the occupation.</li> <li>G. Discuss the role of business and personal ethics in the decision-making process.</li> <li>H. Evaluate various job-related scenarios and justify decisions based on ethics.</li> <li>I. Demonstrate flexibility and adaptability in working with others.</li> <li>J. Demonstrate the use of time management skills.</li> </ul>

<p><b>3. Employability Skills</b></p>
<ul style="list-style-type: none"> <li>A. Demonstrate appropriate attendance and punctuality practices for the classroom and worksite if applicable.</li> <li>B. Prepare a resume, cover letter, and job application forms.</li> <li>C. Demonstrate interviewing techniques using appropriate tone and body language.</li> <li>D. Demonstrate appropriate dress and grooming standards in seeking employment and for the workplace.</li> <li>E. Identify strategies for employment retention.</li> <li>F. Analyze the impact of social networking on employability.</li> <li>G. Identify the need for continuing education, professional development, and professional growth in chosen field.</li> <li>H. Identify appropriate procedures for leaving a job.</li> <li>I. Identify sources of job information, including electronic sources.</li> <li>J. Review company policies and current trends in employee compatibility screening, drug screening, and background checks.</li> </ul>
<p><b>4. Leadership</b></p>
<ul style="list-style-type: none"> <li>A. Define leadership and identify the responsibilities, competencies, and behaviors of successful leaders.</li> <li>B. Work with peers to promote divergent and creative perspectives.</li> <li>C. Demonstrate how to organize and structure work, individually and in teams, for effective performance and the attainment of goals.</li> <li>D. Explain multiple approaches to conflict resolution and their appropriateness for a variety of situations in the workplace.</li> <li>E. Employ ethical behaviors and actions that positively influence others.</li> <li>F. Use a variety of means to positively impact the direction and actions of a team or organization.</li> <li>G. Analyze the short-term and long-term effects a leader's actions and attitudes can have on productivity, morale, and organizational culture.</li> </ul>
<p><b>5. Personal and Occupational Safety</b></p>
<ul style="list-style-type: none"> <li>A. Demonstrate procedures to be followed in the case of emergencies.</li> <li>B. Discuss ways to report a potential safety hazard to a supervisor.</li> <li>C. Identify and discuss cyber ethics, cyber safety, and cyber security.</li> <li>D. Apply personal safety practices to and from the job.</li> <li>E. Describe the procedure for reporting a work-related hazard or injury.</li> <li>F. Recognize the effects of substance abuse in the workplace.</li> <li>G. Recognize good housekeeping as a safety issue.</li> <li>H. Explain the importance of CAL-OSHA.</li> <li>I. Define and discuss ergonomics in relationship to a working environment.</li> <li>J. Discuss the electrical hazards of working with electronic equipment.</li> </ul>

<p><b>6. Animation History</b></p> <ul style="list-style-type: none"> <li>A. Explain the development of worldwide cartooning and animation.</li> <li>B. Demonstrate an understanding of the development of fine art techniques and how they are utilized in cartooning and animation.</li> <li>C. Discuss the evolution of animation technology globally.</li> <li>D. View and analyze current and historical shorts and films to understand how animation has influenced society.</li> </ul>
<p><b>7. Art Theory and Principles</b></p> <ul style="list-style-type: none"> <li>A. Demonstrate proficiency in the understanding of basic forms, underlying structure, value to create form, and simple perspective.</li> <li>B. Demonstrate a working knowledge of the elements of art and how they relate to animation.</li> <li>C. Explore color theory as it applies to animation.</li> <li>D. Demonstrate basic drawing techniques by creating hand drawings showing surface, shading, shadow, density, contour, and perspective.</li> <li>E. Examine animation principles for squash and stretch, anticipation, straight-ahead action, and pose-to-pose.</li> <li>F. Demonstrate knowledge of timing, exaggeration, spacing, and solid drawing principles.</li> <li>G. Demonstrate knowledge of animation principles for slow in/slow out, follow-through and overlapping action, arcs, secondary action, and appeal.</li> </ul>
<p><b>8. Aesthetics</b></p> <ul style="list-style-type: none"> <li>A. Analyze works of art on the following: sensory qualities, expressive qualities, technical processes, and art style and period.</li> <li>B. Examine professional works of animation art.</li> <li>C. Critique student works of animation art.</li> <li>D. Demonstrate knowledge of naming conventions for files.</li> </ul>
<p><b>9. Cartooning</b></p> <ul style="list-style-type: none"> <li>A. Create a character that interacts with another character or a prop.</li> <li>B. Apply basic drawing techniques to computer art and animation using software programs.</li> <li>C. Demonstrate knowledge of simple perspective in both one- and two-point perspective techniques.</li> <li>D. Develop a storyboard to present project idea.</li> <li>E. Create a setting or background in which a character can be animated.</li> <li>F. Demonstrate the ability to simplify human and animal images into cartoon characters.</li> <li>G. Show how expression can be used to give personality to a character.</li> <li>H. Create archetypes that are recognized as such by their audience.</li> <li>I. Use simplified props and objects to create a setting for their characters.</li> <li>J. Demonstrate figure drawing.</li> </ul>

<b>10. Animation Fundamentals</b>
<ul style="list-style-type: none"><li>A. Edit animation into a smooth finished product.</li><li>B. Add sound to animation.</li><li>C. Utilize lighting effects for animation.</li><li>D. Animate a character in a simple walk cycle.</li><li>E. Animate a character in a simple running motion.</li><li>F. Add facial and body expression to a character using bone animation.</li><li>G. Create a loop animation utilizing a bouncing ball.</li><li>H. Create a segment of a morphing animation that will be incorporated into a class project.</li><li>I. Demonstrate the ability to render hands, feet, and facial expressions into a cartoon character.</li><li>J. Create a composition with elements of nature.</li><li>K. Create a complete 3D animation from storyboard to character creation, from set design to final production.</li><li>L. Develop a character and view from multiple angles.</li></ul>
<b>11. Computer Graphics Imaging</b>
<ul style="list-style-type: none"><li>A. Animate images adding color, texture, form, lighting, and sound.</li><li>B. Prepare 2D and 3D animation.</li><li>C. Express feelings and emotion through the artwork of the animation.</li><li>D. Create various textures and apply them to computer images.</li><li>E. Create in-betweens.</li><li>F. Create 3D morphing images.</li><li>G. Transfer video images into software for editing.</li><li>H. Input pencil drawings.</li><li>I. Add color and background to computer "cells."</li><li>J. Create animations and graphics using MAYA.</li></ul>
<b>12. Careers in Animation</b>
<ul style="list-style-type: none"><li>A. Explore pathways and careers in animation and the visual arts.</li><li>B. Research and discuss career interests, including further education.</li><li>C. Practice interviewing techniques for a job or internship.</li><li>D. Discuss characteristics of responsibility, flexibility, leadership, and teamwork in the visual arts..</li></ul>
<b>13. Portfolio</b>

- A. Create a professional digital portfolio reflecting employability skills in the relevant industry to include an “About Me” page.
- B. Collect original works and documents that demonstrate technical skills and knowledge in the industry.
- C. Demonstrate knowledge of competencies by accompanying each selected document or work with a journal entry or summary.
- D. Write a brief resume and cover letter to be included in portfolio.
- E. Practice interviewing techniques using portfolio materials.
- F. Display portfolio materials for critique by a professional panel (industry partners and classmates).
- G. Gather feedback and update portfolio.

## Key Assignments

Assignment	Competencies	Career Ready Practices	Anchor Standards	Pathway Standards	CCSS
1. Students will participate in mock interviews that represent current industry practices (e.g., skills demonstrations, resumes, applications, portfolios, personal websites, etc.).	1A, B, D 3B, C, D, I, J 12, 13	2 3 10	2 3		LS 11-12.6 SLS 11-12.2
2. Students will create a multimedia presentation. Students will compare animated hand drawings to current computer-generated items, and examine selected samples of animation, including early works from Disney, Pixar, examples of Anime, claymation, etc. Then in teams (assigned by year or era), students will analyze the effect of technological development on style and evaluate the impact of history and culture on animation. Students will create a presentation of their findings and present to classmates.	1A, B, D 3B, C, D, I, J 6A-D	1 2 4 5	2 4 5 10	A3.0	LS 11-12.1-6 RSIT 11-12.7
3. Using Maya, create a biped 3D model of a character of choice animating a walk cycle.	1A – F 2A, D, F, I, J 3A 5G 6B 7A – G 8A – D 9A, B, F, G, J 10A, C, D, F, H, I, K, L 11A, B, C, D, F, J	1 2 3 4 7 8 10 11	2 4 5 7 8 10	A1.0 A2.0 A3.0 A4.0 A6.0 A8.0	LS 11-12.1-6 RSIT 11-12.7 G-CO 1,2,4 G-MG 1,3 SEP 1, 4, 5, 8 CC 1 PS 2.c

Assignment	Competencies	Career Ready Practices	Anchor Standards	Pathway Standards	CCSS
<p>4. Complete a flipbook and import images into Adobe Animate to create a 1 to 5 second animation.</p>	1A – F 2A, D, F, I, J 3A 5G 6B 7A-G 8A - D 9B, E-H, J 10F, L 11C, H	1 2 4 5 7 8 10 11 12	2 5 7	A1.0 A4.0	LS 11-12.1-6 G-CO 1,2,4
<p>5. Create a 30 second 2D animation in Adobe Animate using sound effects, dialog, and other sound editing software as appropriate.</p>	1A – F 2A, D, F, I, J 3A 5G 6B 7A – G 8A – D 9A – J 10A -C, F, H-J 11C, E, H, I	1 2 4 5 7 8 9 10 11 12	2 4 5 7 8 9 10	A1.0 A2.0 A3.0 A4.0 A6.0 A7.0	LS 11-12.1-6 RSIT 11-12.7 RHSS 11-12.2, 12.7 RLST 11-12.7 WS 11-12.4, 12.7 WS 11-12.9, 12.10 WHSST 11-12.8-10 G-CO 1, 2, 4 G-MG 1, 3 SEP 1,4,8 CC 1 AD 12.8
<p>6. Using Maya, create a unique 3D model of a character of choice animating a bounce and squish.</p>	1A – F	1	2	A1.0	LS 11-12.1-6



Assignment	Competencies	Career Ready Practices	Anchor Standards	Pathway Standards	CCSS
	2A, D, F, I, J 3A 5G 6B 7A – G 8A – D 9B, F, G, J 10C, F, G, H, J, L 11B, F, J	2 3 4 7 8 10 11	4 5 7 8 10	A2.0 A3.0 A4.0 A6.0 A8.0	G-CO 1,2,4 G-MG 1,3 SEP 1, 4, 5, 8 CC 1 PS 2.c
7. Create a 30 second 2D animation in Adobe Animate for presentation at an Animation Showcase.	1A – F 2A, D, F, I, J 3A 5G 6B 7A – D 8A – D 9A – J 10A, - C, F, H- J 11C, E, H, I	1 2 4 5 7 8 9 10 11 12	2 4 5 7 8 9 10 11	A1.0 A2.0 A3.0 A4.0 A6.0 A7.0 A8.0	LS 11-12.1-6 RSIT 11-12.7 RHSS 11-12.2 RHSS 11-12.7 RLST 11-12.7 WS 11-12.4 WS 11-12.7 WS 11-12.9 WS 11-12.10 WHSST 11-12.8-10 G-CO 1, 2, 4 G-MG 1, 3 SEP 1,4,8 CC 1 AD 12.8
8. Complete a 30 second 3D animation with audio utilizing all animation skills presented during the course for a school-wide event.	1A – F 2A, D, F, I, J 3A 4C	1 2 4 5	2 4 5 7	A1.0 A2.0 A3.0 A4.0	LS 11-12.1-6 RSIT 11-12.7 RHSS 11-12.2 RHSS 11-12.7

Assignment	Competencies	Career Ready Practices	Anchor Standards	Pathway Standards	CCSS
	5G 6A, B 7A – G 8A – D 9A – J 10A, B, C, F, H, I, K, L 11A, B, F, J	7 8 9 10 11 12	8 9 10	A6.0 A7.0 A8.0	RLST 11-12.7 WS 11-12.4 WS 11-12.7 WS 11-12.9 WS 11-12.10 WHSST 11-12.8-10 G-CO 1, 2, 4 G-MG 1, 3 SEP 1,4,8 CC 1 AD 12.8
9. Prepare a portfolio of work samples, reflections, and job search documents.	1A – F 2A, D, F, I, J 3A, B, F 5G 13	1 2 3 8 10 11 12	3 10 11	A1.0 A5.0	All above.

## Standards Assessed in this Program

## Career Ready Practices

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

## Anchor Standards

**2.0 Communications**

- Acquire and use accurately sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.

**3.0 Career Planning and Management**

- Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans.

**4.0 Technology**

- Use existing and emerging technology, to investigate, research, and produce products and services, including new information, as required in the sector workplace environment.

**5.0 Problem Solving and Critical Thinking**

- Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques.

**6.0 Health and Safety**

- Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the sector workplace environment.

**7.0 Responsibility and Flexibility**

- Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the sector workplace environment and community settings.

**8.0 Ethics and Legal Responsibilities**

- Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms.

## 9.0 Leadership and Teamwork

- Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution.

## 10.0 Technical Knowledge and Skills

- Apply essential technical knowledge and skills common to all pathways in the sector following procedures when carrying out experiments or performing technical tasks.

## Pathway Standards

### Arts, Media, and Entertainment - Design, Visual, and Media Arts Pathway

**A1.0** Demonstrate ability to reorganize and integrate visual art elements across digital media and design applications.

**A2.0** Apply artistic skills and processes to solve a variety of industry relevant problems in a variety of traditional and electronic media.

**A3.0** Analyze and assess the impact of history and culture on the development of professional arts and media products.

**A4.0** Analyze, assess and identify effectiveness of artistic products based on elements of art, the principles of design, and professional industry standards.

**A5.0** Identify essential industry competencies, explore commercial applications and develop a career specific personal plan.

**A6.0** Analyze characteristics of subgenres (e.g., satire, parody, allegory, pastoral) that are used in poetry, prose, plays, novels, short stories, essays, and other basic genres.

**A7.0** Demonstrate an understanding of the elements of discourse (e.g., purpose, speaker, audience, form) when completing narrative, expository, persuasive, or descriptive writing assignments.

**A8.0** Understand the key technical and technological requirements applicable to various segments of the Media and Design Arts Pathway.

### Arts, Media, and Entertainment - Game Design and Integration Pathway

**D1.0** Demonstrate understanding of current trends and the historical significance of both electronic and non-electronic games. Students will analyze different game systems and identify how these systems have influenced consumer technology.

**D2.0** Analyze the core tasks and challenges of video game design and explore the methods used to create and sustain player immersion.

**D3.0** Acquire and apply appropriate game programming concepts and skills to develop a playable video game.

**D4.0** Students will demonstrate mastery of game art and multimedia, including music, sound, art, and animation.

**D5.0** Demonstrate an understanding of testing techniques used to evaluate, assess, rate, and review quality assurance of video games.

**D6.0** Understand the general procedures, documentation, and requirements of large scale game design projects. Examine and categorize the significant processes in the production of games.

**D7.0** Understand the fundamentals of business and marketing, including entrepreneurship, global marketing, and localization.

**D8.0** Understand the impact of games and the role of play in human culture. Analyze the ethics and global impact of the game industry.

**D9.0** Identify career goals and develop a career plan that explores employment opportunities in the video game industry.

**D10.0** Students will build a game that demonstrates teamwork and project management by creating a game design production plan that describes the game play, outcomes, controls, rewards, interface, and artistic style of a video game.

## Common Core State Standards

### ENGLISH LANGUAGE ARTS

#### Language Standards

**LS 11-12.1:** Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

**LS 11-12.2:** Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

**LS 11-12.3:** 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.

**LS 11-12.4:** Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grades 11-12 reading and content*, choosing flexibly from a range of strategies.

**LS 11-12.5:** Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

**LS 11-12.6:** Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the (career and college) readiness level, demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

#### Reading Standards for Information

**RSIT 11-12.7:** Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

#### Reading Standards for Literacy in History/Social Studies

**RHSS 11-12.2:** Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.

**RHSS 11-12.7:** Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.

#### Reading Standards for Literacy in Science and Technical Subjects;

**RLST 11-12.7:** 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.

#### Speaking and Listening Standards

**SLS 11-12.2:** Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions, and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.

**SLS 11-12.1:** Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners, building on others ideas and expressing their own clearly and persuasively.

**SLS 11-12.1d:** Respond thoughtfully to diverse perspectives, synthesize comments, claims and evidence made on all sides of an issue, resolve contradictions when possible, and determine what additional information or research is required to deepen the investigation or complete the work.

#### Writing Standards

**WS 11-12.4:** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

**WS 11-12.6:** Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback including new arguments and information.

**WS 11-12.7:** Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem, narrow or broaden the inquiry when appropriate, synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.'

**WS 11-12.9:** Draw evidence from literary or informational texts to support analysis, reflection, and research.

**WS 11-12.10:** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for range of tasks, purposes, and audiences.

## Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects

**WHSST 11-12.8:** 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; 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.

**WHSST 11-12.9:** Draw evidence from informational texts to support analysis, reflection, and research.

**WHSST 11-12.10:** Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes and audiences.

## MATHEMATICS

### Geometry

**G-CO 1:** Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, and distance along a line, and distance around a circular arc.

**G-CO 2:** Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).

**G-CO 4:** Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.

### Geometry – Modeling with Geometry

**C-MG 1:** Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).

**C-MG 3:** Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost: working with typographic grid systems based on ratios).

## SCIENCE

### Crosscutting Concept

**CC 1:** Patterns

### Scientific and Engineering Practices

**SEP 1:** Asking questions (for science) and defining problems (for engineering).

**SEP 4:** Analyzing and interpreting data.  
**SEP 5:** Using mathematics and computational thinking.  
**SEP 8:** Obtaining, evaluating, and communicating information.

**Physical Science**

**PS 2.c:** Stability and Instability in Physical Systems.

**HISTORY/ SOCIAL SCIENCE**

**Principles of American Democracy and Economics**

**AD 12.8:** Students evaluate and take and defend positions on the influence of the media on American political life.