

**Arts, AV Technology and Communications Career Cluster
Principles and Concepts of Animation
Course Number: 48.42200**

Course Description

In Principles and Concepts of Animation, students will continue to develop and implement aesthetics of color selection, storyboarding in 2-D digital animation, and develop animatic creations from 2-D to 3-D. Students in this course will learn interface tools, the use of drawing tools, animating the camera, importing images from web sources and files, working with sound and lip syncing, understanding paths and motion design, and frame by frame animation creation relative to sequence planning and pacing. This course will allow students to explore more advanced aspects of character animation including subtle character gesture and advanced action timing with emphasis on personal observation. The course will allow students to develop an understanding of basic sound considerations such as lip syncing, voice-overs, and the synchronization of sound with the visual product. This course will allow students to build on previously learned storyboarding skills, develop scripts, determine character motivations, consider setting and motion variables, and learn other unique traits of animation through integrated activities. *Prerequisite(s): Introduction to Digital Media*

Course Standard 1

AAVTC-PCA-1

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

Standard: Demonstrate employability skills required by business and industry.

The following elements should be integrated throughout the content of this course.

1.1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.

Person-to-Person Etiquette	Telephone and Email Etiquette	Cell Phone and Internet Etiquette	Communicating At Work	Listening
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude
	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

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Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé
Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé
Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths
Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

1.3 Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads
	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

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1.4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

1.5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills.

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

1.6 Present a professional image through appearance, behavior and language.

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism
International Etiquette			Demonstrating Leadership

Cross-Cultural Etiquette			
Working in a Cubicle			

Support of CTAE Foundation Course Standards and Georgia Standards of Excellence L9-10RST 1-10 and L9-10WHST 1-10:

Georgia Standards of Excellence ELA/Literacy standards have been written specifically for technical subjects and have been adopted as part of the official standards for all CTAE courses.

Course Standard 2

AAVTC-PCA-2

Understand and follow safety procedures when working with computer and television equipment.

- 2.1 State general safety rules for operation of equipment and learning activities specific to film, computer, and graphic laboratory equipment.
- 2.2 Collect and display safe practices when working on assignments.
- 2.3 Recognize and practice safe and secure transportation of equipment.

Course Standard 3

AAVTC-PCA-3

Understand and utilize trade terminology in an appropriate manner.

- 3.1 Identify and utilize trade terminology in the media production lab.
- 3.2 Identify and utilize trade abbreviations and acronyms as appropriate.

Course Standard 4

AAVTC-PCA-4

Demonstrate effective professional communication skills (oral, written, and digital) and practices that enable positive customer relationships.

- 4.1 Recognize the importance of all customers to a business.
 - a. Identify organization's products and services.
 - b. State the information technology influence and impact on business.
 - c. Formulate how technology can be used to create a solution to a business challenge and present to customers in professional business formats.
- 4.2 Display and practice approaches to assist customers in a professional manner.
 - a. Apply active listening concepts with potential customers.
 - b. List and classify customers' individual needs and draw conclusions concerning them.
 - c. Design a professional business image (e.g., appearance, voice, grammar, word usage, enunciation, nonverbal communication).

Course Standard 5

AAVTC-PCA-5

Develop an understanding of the history of animation and the evolution of 2-D to 3-D animation.

- 5.1 Identify and distinguish concepts of animation history.
- 5.2 Interpret an understanding of the transition from using drawings to digital media.
- 5.3 Formulate an understanding of flip books, pegs, and light table and how they apply to animation.

Course Standard 6

AAVTC-PCA-6

Demonstrate storyboarding skills and document project goals in order to develop an animation project.

- 6.1 Recognize the purpose of the animation and target audience.
- 6.2 List the objects, backgrounds, and/or characters.
- 6.3 Apply brainstorming techniques to focus development efforts.
- 6.4 Create scene-by-scene illustrations.
- 6.5 Identify patterns between scripting and storyboarding.
- 6.6 Apply concepts of sketching basics and cut-out animations.
- 6.7 Identify, organize, and synthesize the rules governing an animation world (realistic/fantastic animations).
- 6.8 List, classify, and differentiate the sequence of production. (Pre-production, Production, Post-production)
- 6.9 Identify patterns and apply concepts of an effective story.

Course Standard 7

AAVTC-PCA-7

Acquire knowledge of animation software and features.

- 7.1 Show effective use of menu bars, command panels, and software navigation tools.
- 7.2 Illustrate the ability to select objects and sub objects.
- 7.3 Use, construct, and create project files and libraries.
- 7.4 Show effective use of common Keyboard Shortcuts.
- 7.5 Use common file formats for animations, graphics, sounds, and movies.
- 7.6 Explain how to import images; and distinguish when to use these images effectively.
- 7.7 Design a character head and apply lip-syncing concepts in a short clip.
- 7.8 Rig characters and objects to animate them using forward and inverse kinematics.

Course Standard 8

AAVTC-PCA-8

Understand and use trade terminology in an appropriate manner.

- 8.1 Identify and use trade terminology of the animation lab.
- 8.2 Collect and display trade abbreviations and acronyms.
- 8.3 Identify and use science terminology appropriately.

Course Standard 9

AAVTC-PCA-9

Demonstrate knowledge of creating 2-D and 3-D animations.

- 9.1 Define, interpret, and apply concepts of inverse kinematics.
- 9.2 Create effective frame-by-frame animation, layers, and cloning.
- 9.3 Create animation paths and motion.

Course Standard 10

AAVTC-PCA-10

Compare and contrast methods used to modify 3-D models.

- 10.1 Apply concepts to project a 2-D object into a 3-D object.
- 10.2 Investigate and apply concepts how modifiers will rotate an object.
- 10.3 Use concepts to modify edges, faces, and vertices.

Course Standard 11

AAVTC-PCA-11

Demonstrate knowledge of the movement cycles in animation.

- 11.1 Construct a simple two-dimensional animation of a walk cycle.
- 11.2 Show the mechanics of motion (speed, acceleration, action/reaction, gravity).
- 11.3 Apply the concepts of the natural movements of motion (pendulum and squash/stretch).
- 11.4 Apply the concepts and tools used for movement cycles.

Course Standard 12

AAVTC-PCA-12

Demonstrate the ability to apply color to animations properly.

- 12.1 Categorize color formats.
- 12.2 Distinguish the ambient and diffuse color of an object.
- 12.3 Summarize and classify the specular, reflective, and luminosity material properties of objects.
- 12.4 Illustrate filters to an object.

Course Standard 13

AAVTC-PCA-13

Apply knowledge of effective use of lights on 2-D and 3-D objects.

- 13.1 Compare and contrast natural light versus artificial light.
- 13.2 Apply principles of basic color theory to lighting.
- 13.3 Construct the functions of shadows.

Course Standard 14

AAVTC-PCA-14

Demonstrate knowledge of setting and modifying camera views.

- 14.1 Compare and contrast the difference between a free and a target camera.
- 14.2 Calculate and change camera's focal length.
- 14.2 Create a multi plane and multilayer project.
- 14.3 Describe and apply the use of motion blur on an object.
- 14.4 Apply techniques to create shadows.
- 14.5 Locate and import sounds and clips into projects.
- 14.6 Apply correctly the concept of parallax. (*Depth of field and camera view*)
- 14.7 Develop a lip sync sequence.
- 14.8 Create multi effects in an animation.

Course Standard 15

AAVTC-PCA-15

Identify logistical, ethical, and legal Issues related to digital media and apply concepts to use of text, graphics, animation, sound, video, and digital images in digital products.

- 15.1 Research the privacy, legal and ethical issues of digital media ensuring to meet the standards and web accessibility requirements for completed digital products including but not limited to copyright, digital rights management, piracy, trademark, open source, plagiarism, fair use, permission, creative commons license, etc.
- 15.2 Investigate the legal and ethical implications of using social media.
- 15.3 Cite evidence of security issues associated with the internet including but not limited to backing up files & cloud storage, e-commerce and collecting customer information, vendor tracking devices, hacking, and data security on a web site.

- 15.4 Assess violations of copyright and trademark.
- 15.5 Collect and display copyright and trademark principles.

Course Standard 16

AAVTC-PCA-16

Create and maintain a working portfolio of student projects and activities.

- 16.1 Create a multimedia portfolio that includes correctly published animation(s).
- 16.2 Hypothesize the audience's experience.
- 16.3 Summarize student's major decisions in the production process.
- 16.4 Create and exhibit the portfolio in a class setting.

Course Standard 17

AAVTC-PCA-17

Examine how related student organizations are integral parts of career and technology education courses through leadership development, school and community service projects and competitive events.

- 17.1 Explain the purpose, mission, objectives, motto, colors, official dress and other distinguishing characteristics of SkillsUSA.
- 17.2 Explain how participation in SkillsUSA can promote lifelong responsibility for community service, professional growth and development.
- 17.3 Explore the impact and opportunities SkillsUSA can develop to bring business and industry together with education in a positive working relationship through innovative leadership and career development programs.
- 17.4 Explore the local, state, and national opportunities available to students through participation in SkillsUSA including but not limited to conferences, competitions, community service, philanthropy, and other SkillsUSA activities.