

Orange Unified School District
COMPUTER ANIMATION I
Year Course

GRADE LEVEL: 10-12

PREREQUISITES: Pass High School Computer Proficiency or completion of Computer Technology A class.

INTRODUCTION TO THE SUBJECT:

Computer Animation I is an introduction to the art of computer graphic animation. It is an in-depth, hands-on course that allows students to learn transferable skills and concepts used in the work force and in our highly technological society related to the fields of computer animation and design.

COURSE GOALS AND/OR STUDENT OUTCOMES:

The learning outcomes for students in Computer Animation I are categorized into five basic areas of development:

Communications

Ability to gather, process, and understand the numerable inputs and innovations in the field, and recognize career possibilities and opportunities in computer animation.

Design

Applying and evaluating the design processes; creative expression of ideas through design.
Developing individual style and technique

Technology

Students develop the attitudes, knowledge, skills, perspective and vision necessary to make informed decisions in a technological society, especially within the field of digital media. An appreciation for and a commitment to lifelong learning are closely tied to the success of creative individuals in an increasingly dynamically changing technology relating to computer graphics.

Critical Thinking

Interpreting, evaluating and analyzing digital works of art, both the student's and others, in the context of reflective thought and critical discussion. Showing an understanding of the important aspects of a work. Finding solutions to design and communications problems through critical examination of the purpose and aesthetics involved. Selecting and utilizing a variety of subject matter and symbols to express ideas in visual form.

Production

Using digital technology to create industry standard projects, which include the necessary production techniques and skills and understanding of production processes in the computer animation industry. Using computer animation terminology, applications, and hardware to produce a variety of projects using digital media to create and present.

COURSE OBJECTIVES:

BY THE END OF THE COURSE THE STUDENT WILL BE ABLE TO:

Computer Animation I will meet the following Visual Arts Standards, Grade 9-12 Advanced from the Visual and Performing Arts Content Standards for California Schools, Kindergarten Through Grade Twelve.

ARTISTIC PERCEPTION

Processing, analyzing, and responding to sensory information through the language and skills unique to the arts (Standard 1, Grades 9-12 Advanced). Students learn how to perceive the world in an artistic way and they identify visual elements and principles of design using the language of the visual arts.

Students will discuss complex issues, such as distortion of shapes/form, space, scale, and real vs. virtual.

Students will use art vocabulary to describe and analyze their animation projects.

CREATIVE EXPRESSION

Creating, performing, and participating in the arts (Standard 2, Grades 9-12 Advanced). Students apply the knowledge and skills to demonstrate the processes in creating original artworks based on personal experiences.

Students will produce an animation project that effectively uses the elements and principles of design.

Students will demonstrate the ability to synthesize different subjects, themes, images, and visual metaphors in creating an animation project.

AESTHETIC VALUING

Responding to, analyzing, and making judgments about artworks (Standard 4, Grades 9-12, Advanced). Students make critical judgments about and determine the quality of visual artworks and art experiences in accord with learned elements and principles of art.

Students make sound critical judgments about the quality and success of animation projects based on his or her experiences in and perceptions about the visual art forms.

Students use criteria for making judgments and identify the difference between preference and judgment.

CONNECTIONS, RELATIONS, APPLICATIONS

Connecting and applying what is learned in each art form to learning in other art forms, subject areas, and careers (Standard 5, Grades 9-12, Advanced). Students develop competencies in problem solving, communications skills, and management of time and resources, all of which contribute to lifelong learning and career skills.

Students describe their own animation projects using descriptive and reflective writing.

Students organize, maintain, interpret, and communicate information.

Students research animation and animation careers in California.

COURSE OVERVIEW AND APPROXIMATE UNIT TIME ALLOTMENTS:

FIRST SEMESTER

WEEKS

I.	Introduction to Class and Course Requirements	1
II.	Introduction to Animation Basics	4
III.	Storyboard Development	4
IV.	Introduction to Computer Program	2
V.	Basic 2-D Computer Animation	6
	A. Key Terms	
	B. Points, Lines and Surfaces	
	C. Geometric Primitives	
	D. Basic Modeling Utilities	
	E. Create Drawings	
	F. Create Wire-Frame Models	
VI.	Testing and Assemblies	1

<u>SECOND SEMESTER</u>	<u>WEEKS</u>
I. 3-D Animation	5
A. Key Terms	
B. Space, Objects and Structures	
C. Geometric Primitives	
D. Groups and Hierarchical Structures	
II. 3D Modeling and Rendering	5
A. Key Terms	
B. Advanced Modeling Techniques	
C. Basic Rendering Concepts	
D. Steps in the Rendering Process	
E. Hidden Surface Removal	
F. File Formats for Image Output	
G. Output on Digital Media	
III. Guest Speaker/Industrial Visits	1
IV. Animation Project/Portfolio Development	6
V. Assemblies and Testing	1

DATE OF CONTENT REVISION: NEW

DATE OF BOARD APPROVAL: March 14, 2002

Addendum

THE CALIFORNIA CONTENT STANDARDS

Advanced Visual Arts

1.0 ARTISTIC PERCEPTION

Processing, Analyzing, and Responding to Sensory Information Through the Language and Skills Unique to the Visual Arts

Students perceive and respond to works of art, objects in nature, events, and the environment. They also use the vocabulary of the visual arts to express their observations.

Develop Perceptual Skills and Visual Arts Vocabulary

- 1.1 Analyze and discuss complex ideas, such as distortion, color theory, arbitrary color, scale, expressive content, and real versus virtual in works of art.
- 1.2 Discuss a series of their original works of art, using the appropriate vocabulary of art.
- 1.3 Analyze their works of art as to personal direction and style.

Analyze Art Elements and Principles of Design

- 1.4 Research two periods of painting, sculpture, film, or other media and discuss their similarities and differences, using the language of the visual arts.
- 1.5 Compare how distortion is used in photography or video with how the artist uses distortion in painting or sculpture.
- 1.6 Describe the use of the elements of art to express mood in one or more of their works of art.

Impact of Media Choice

- 1.7 Select three works of art from their art portfolio and discuss the intent of the work and the use of the media.
- 1.8 Analyze the works of a well-known artist as to the art media selected and the effect of that selection on the artist's style.

2.0 CREATIVE EXPRESSION

Creating, Performing, and Participating in the Visual Arts

Students apply artistic processes and skills, using a variety of media to communicate meaning and intent in original works of art.

Skills, Processes, Materials, and Tools

- 2.1 Create original works of art of increasing complexity and skill in a variety of media that reflect their feelings and points of view.
- 2.2 Plan and create works of art that reflect complex ideas, such as distortion, color theory, arbitrary color, scale, expressive content, and real versus virtual.
- 2.3 Assemble and display objects or works of art as part of a public exhibition.

Communicate and Express Through Original Works of Art

- 2.4 Demonstrate in their own works of art a personal style and an advanced proficiency in communicating an idea, theme, or emotion.
- 2.5 Use innovative visual metaphors in creating works of art.
- 2.6 Present a universal concept in a multimedia work of art that demonstrates knowledge of technology skills.

3.0 HISTORICAL AND CULTURAL CONTEXT
Understanding the Historical Contributions and Cultural Dimensions of the Visual Arts

Students analyze the role and development of the visual arts in past and present cultures throughout the world, noting human diversity as it relates to the visual arts and artists.

Role and Development of the Visual Arts

- 3.1 Identify contemporary styles and discuss the diverse social, economic, and political developments reflected in the works of art examined.
- 3.2 Identify contemporary artists worldwide who have achieved regional, national, or international recognition and discuss ways in which their work reflects, plays a role in, and influences present-day culture.

Diversity of the Visual Arts

- 3.3 Investigate and discuss universal concepts expressed in works of art from diverse cultures.
- 3.4 Research the methods art historians use to determine the time, place, context, value, and culture that produced a given work of art.

4.0 AESTHETIC VALUING
Responding to, Analyzing, and Making Judgments About Works in the Visual Arts

Students analyze, assess, and derive meaning from works of art, including their own, according to the elements of art, the principles of design, and aesthetic qualities.

Derive Meaning

- 4.1 Describe the relationship involving the art maker (artist), the making (process), the artwork (product), and the viewer.
- 4.2 Identify the intentions of artists creating contemporary works of art and explore the implications of those intentions.
- 4.3 Analyze and articulate how society influences the interpretation and message of a work of art.

Make Informed Judgments

- 4.4 Apply various art-related theoretical perspectives to their own works of art and the work of others in classroom critiques.
- 4.5 Construct a rationale for the validity of a specific work of art—artwork that falls outside their own conceptions of art.
- 4.6 Develop written criteria for the selection of a body of work from their portfolios that represents significant achievements.

5.0 CONNECTIONS, RELATIONSHIPS, APPLICATIONS
Connecting and Applying What Is Learned in the Visual Arts
to Other Art Forms and Subject Areas and to Careers

Students apply what they learned in the visual arts across subject areas. They develop competencies and creative skills in problem solving, communication, and management of time and resources that contribute to lifelong learning and career skills. They also learn about careers in and related to the visual arts.

Connections and Applications

- 5.1 Speculate on how advances in technology might change the definition and function of the visual arts.

Visual Literacy

- 5.2 Compare and contrast works of art, probing beyond the obvious and identifying Psychological content found in the symbols and images.

Career and Career-Related Skills

- 5.3 Prepare portfolios of their original works of art for a variety of purposes (e.g., review for postsecondary application, exhibition, job application, and personal collection).
- 5.4 Investigate and report on the essential features of modern or emerging technologies that affect or will affect visual artists and the definition of the visual arts.

