Course Title: 3D Modeling 1a/1b

State: TX
State Course Title: 3-D Modeling and Animation
State Course Code: 130.125
State Standards: Texas Essential Knowledge and Skills for Career and Technical Education
Date of Standards: 2020

Percentage of Course Aligned: 95%

TEKS	Course Title (a or b), if applicable, e.g. Game Design 1a	Unit Name(s)	Lesson(s) Numbers
(1) Creativity and innovation. The student demonstrates creative thinking, constructs knowledge, and develops innovative products and processes using technology. The student is expected to:			
(A) evaluate, edit, and create scripts for animations;	3D Modeling 1a:Introduction	Unit 1: Joining the Modeling Studio	Lesson 4
(B) identify and apply color theories, including harmony rules, tints, shades, gradients, color mixing, new color creation, and the visual impacts of specific color combinations using a digital format;	3D Modeling 1b: Set the Scene	Unit 2: Surfaces, Shadows, and Lighting	Lesson 2
(C) apply texture, transparency, skinning, and contour along a 3-D object surface;	3D Modeling 1b: Set the Scene	Unit 3: Adding Materials and Texture	Lesson 5
(D) compare, contrast, and integrate the basic sound editing principles, including mixing and manipulating wave forms, audio tracks, and effects;	3D Modeling 1b: Set the Scene	Unit 5: Rigging and Animation	Lesson 5
(E) compare and contrast the rules of composition such as the rule of thirds or the golden section/rectangle with respect to harmony and balance;	3D Modeling 1a:Introduction	Unit 8: Putting It All Together	Lesson 2
(F) evaluate the fundamental concepts of 3-D modeling and design such as composition, perspective, angles, lighting, repetition, proximity, white space, balance, and contrast;	3D Modeling 1a:Introduction	Unit 8: Putting It All Together	Lesson 2
(G) analyze 3-D model objects to interpret the point of interest, the prominence of the subject, and visual parallels between the structures of natural and human-made environments;	3D Modeling 1b: Set the Scene	Unit 6: Environmental and Mathematical Modeling	Lesson 1
(H) distinguish among typefaces while recognizing and resolving conflicts that occur through the use of typography as a design element;	3D Modeling 1a:Introduction	Unit 3: Basic Modeling Technology	Lesson 5
(I) use perspective, including spot and directional light, backgrounds, ambience, shades and shadows, and hue and saturation;	3D Modeling 1b: Set the Scene	Unit 2: Surfaces, Shadows, and Lighting	Lesson 3
(J) use the basic principles of design such as proportion, balance, variety, emphasis, harmony, symmetry, and unity in type, color, size, line thickness, shape, and space;	3D Modeling 1a:Introduction	Unit 8: Putting It All Together	Lesson 2

(K) edit files using appropriate digital editing tools and established design principles such as consistency, repetition, alignment, proximity, white space, image file size, color use, font size, type, and style; and	3D Modeling 1a:Introduction	Unit 3: Basic Modeling Technology	Lesson 3
(L) identify pictorial qualities in a design such as shape and form, space and depth, or pattern and texture to create visual unity and desired effects in designs.	3D Modeling 1b: Set the Scene	Unit 3: Adding Materials and Texture	Lesson 2
(2) Communication and collaboration. The student uses digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning experience of others. The student is expected to:			
(A) use vocabulary as it relates to digital art, audio, and animation;	3D Modeling 1b: Set the Scene	Unit 3: Adding Materials and Texture	Lesson 2
(B) demonstrate the use of technology to participate in self-directed and collaborative activities within the global community;	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 3
(C) participate in electronic communities;	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 3
(D) create technology specifications for tasks and rubrics for the evaluation of products;	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 3
(E) design and implement procedures to track trends, set timelines, and evaluate products;	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 3
(F) collaborate with peers in delineating technological tasks;	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 3
(G) publish and save information in a variety of ways, including print or digital formats;	3D Modeling 1a:Introduction	Unit 8: Putting It All Together	Lesson 3
(H) analyze and evaluate projects for design, content delivery, purpose, and audience; and	3D Modeling 1a:Introduction	Unit 8: Putting It All Together	Lesson 3
(I) critique original 3-D digital artwork, portfolios, and products with peers.	3D Modeling 1a:Introduction	Unit 8: Putting It All Together	Lesson 3
(3) Research and information fluency. The student applies digital tools to gather, evaluate, and use information. The student is expected to:			
(A) distinguish among and correctly apply process color (RGB and CYMK), spot color, and black or white;	3D Modeling 1b: Set the Scene	Unit 8: Heavyweight Champ	Lesson 1
(B) research the history of 3-D modeling and 3-D animation;	3D Modeling 1a:Introduction	Unit 1: Joining the Modeling Studio	Lesson 2
(C) research career choices in 3-D modeling and 3-D animation;	3D Modeling 1a:Introduction	Unit 1: Joining the Modeling Studio	Lesson 4

(D) use the Internet to retrieve information in an electronic format;	3D Modeling 1a:Introduction	Unit 2: The Tools of the Trade	Lesson 2
(E) demonstrate the appropriate use of 3-D objects, digital imaging, video integration, and sound retrieved from an electronic format;	3D Modeling 1b: Set the Scene	Unit 8: Heavyweight Champ	Lesson 3
(F) import sounds from a variety of sources; and	3D Modeling 1b: Set the Scene	Unit 5: Rigging and Animation	Lesson 5
(G) create planning designs such as rough sketches, storyboards, and brainstorming materials.	3D Modeling 1a:Introduction	Unit 3: Basic Modeling Technology	Lesson 4
(4) Critical thinking, problem solving, and decision making. The student uses critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. The student is expected to:			
(A) distinguish between and use the components of 3-D animation software programs such as cast, score, environment, the X-Y-Z coordinate system, and the animation manipulation interface;	3D Modeling 1a:Introduction	Unit 3: Basic Modeling Technology	Lesson 3
(B) distinguish between and use the different 3-D modeling techniques such as box modeling, transformation, and polygon primitives using extrusion and rotation;	3D Modeling 1a:Introduction	Unit 3: Basic Modeling Technology	Lesson 3
(C) distinguish between and use the different 3-D animation techniques such as path and rendering using dynamics and physics;	3D Modeling 1a:Introduction	Unit 6: Modifying Mesh	Lesson 1
(D) apply a variety of color schemes such as monochromatic, analogous, complementary, primary/secondary triads, cool/warm colors, and split complements to digital designs;	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 4
(E) use the basic concepts of color and design theory such as working with 3-D models and environments, characters, objects, and other cast members as needed for the animation;	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 4
(F) use the appropriate rendering techniques to create an animation;	3D Modeling 1b: Set the Scene	Unit 2: Surfaces, Shadows, and Lighting	Lesson 4
G) use a variety of lighting techniques such as shadow, shading, point, spot, directional, and ambient to create effects; and	3D Modeling 1b: Set the Scene	Unit 2: Surfaces, Shadows, and Lighting	Lesson 3
(H) define the design attributes and requirements of a 3-D animation project.	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 1
(5) Digital citizenship. The student understands human, cultural, and societal issues related to technology and practices legal and ethical behavior. The student is expected to:			
(A) discuss copyright laws/issues and use of digital information such as attributing ideas and citing sources using established methods;	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 2

(B) define plagiarism and model respect of intellectual property;	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 2
(C) demonstrate proper digital etiquette and knowledge of acceptable use policies when using technology; and	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 2
(D) evaluate the validity and reliability of sources.	3D Modeling 1b: Set the Scene	Unit 1: The 3D Industry and Production Process	Lesson 2
(6) Technology operations and concepts. The student demonstrates a sound understanding of technology concepts, systems, and operations. The student is expected to:			
(A) demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components;	3D Modeling 1a:Introduction	Unit 2: The Tools of the Trade	Lesson 2
(B) make decisions regarding the selection and use of software and Internet resources;	3D Modeling 1a:Introduction	Unit 2: The Tools of the Trade	Lesson 2
(C) make necessary adjustments regarding compatibility issues with digital file formats, importing and exporting data, and cross-platform compatibility; and	3D Modeling 1a:Introduction	Unit 3: Basic Modeling Technology	Lesson 2
(D) read, use, and develop technical documentation.	3D Modeling 1a:Introduction	Unit 1: Joining the Modeling Studio	Lesson 1