Dates:	**17 days**	
Big Idea:	3D Modeling and Animation	
Teaching Targets	**TEKS:** 1(E) evaluate the fundamental concepts of a digital art and design such as composition, perspective, angles, lighting, repetition, proximity, white space, balance, and contrast; (F) analyze digital art designs to interpret the point of interest, the prominence of the subject, and visual parallels between the structures of natural and human-made environments; (I) 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; (K) 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. 2(A) use vocabulary as it relates to digital art, audio, and animation; 2(B) demonstrate the use of technology to participate in self-directed and collaborative activities within the global community; (C) participate in electronic communities; (D) create technology specifications for tasks and rubrics for the evaluation of products; (E) design and implement procedures to track trends, set timelines, and evaluate products; (F) collaborate with peers in delineating technological tasks; (G) publish and save information in a variety of ways, including print or digital formats; (H) analyze and evaluate projects for design, content delivery, purpose, and audience; and (I) critique original digital artwork, portfolios, and products with peers. 3(G) create planning designs such as rough sketches, storyboards, and brainstorming materials. 4(C) create three-dimensional effects by layering images such as foreground, middle distance, and background images; (H) define the design attributes and requirements of products created for a variety of purposes such as posters, billboards, logos, corporate identity, advertisements, book jackets, brochures, and magazines. 6(A) demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components; (B) make decisions regarding the selection and use of software and Internet resources; (C) make necessary adjustments regarding compatibility issues with digital file formats, importing and exporting data, and cross-platform compatibility; and (D) read, use, and develop technical documentation.	**Student Objectives:** ● Students will be able to identify points in 3D space, perspective viewpoints, the XYZ axes, basic rendering styles, object manipulation, and object pivot points. ● Complete projects, one of which will compete in a contest.

ELPS	1(H) use strategies such as visuals or manipulation to learn the meaning of new vocabulary related to basic orientation for 3D animation. 2(I) demonstrate listening comprehension by creating a castle.	As a part of language acquisition, students will: Suggested Teacher Behaviors by Level and Domain
Prior Knowledge	Photoshop, typography, copyright/ethics, taking photos and uploading them to the correct software. Proficiency in the knowledge and skills relating to Technology Applications, Grades 6-8. http://ritter.tea.state.tx.us/rules/tac/chapter126/ch126b.pdf	
Distractor Factors	Misconception: Correction:	

Recommended Lessons

Basic Orientation for 3D Animation --PowerPoint 1 –PowerPoint 2
Students will explain how different 3D software packages designate the 3 axes. Determine points in 3D space using XYZ coordinates. Identify vertices, edges, and polygons of a 3D object. Identify the difference between orthogonal and perspective viewports. Demonstrate methods for rotating, panning, and zooming viewports. Identify different rendering styles. Demonstrate transformation, scaling, and rotation of a 3D object.
Move the pivot point of an object to match the planned movement.

Lesson 1: Sketchup for Beginners Part 1
Lesson 2: Sketchup for Beginners Part 2
Lesson 3: Sketchup Inference System, Rotating Objects
Lesson 4: Scaling in Sketchup, Pattern Fill
Lesson 5: Importing Objects from Thingverse

Sketchup in the classroom –
Create full models of medieval castles. Decorate the rooms with furniture and wall hangings from the period. Focus on historical accuracy, geometric principles, lighting, and basic physics.

Resources

SketchUp User's Guide
Quick Reference Card
Using Google SketchUp Part 1
Using Google SketchUp Part 2
Google SketchUp 8 Essential Training
5 Ideas for how to use SketchUp in your classroom

Technology Integration	Extensions and Interventions

Writing Prompts

Why did you pick this type of castle and what are the defining characteristics of this castle?

Essential Questions	Assessment
What is SketchUp? Why use SketchUp? How does 3D imaging factor into today's multimedia?	Basic Orientation for 3D Animation: Written Exam Create medieval castle Rubric Multimedia Festival 3D project (student choice for topic - Rubric)

Vocabulary

X,Y,Z axis, perspective, render, rotation, model, CAD (Computer aided design), Scale, orbit, endpoint, Origin, pivot point

LEP Accommodations	SPED Accommodations	SPED/LEP Accommodations
● Bilingual Dictionaries ● Extended Time – spreadsheet ● STAAR L – accommodations in computer	● Supplemental Aids ● Manipulatives ● Extended Time ● TEA Accommodation Triangle ● Lead4ward Accommodations Sheet **Note: Expected to be used in class routinely and can ONLY be used on tests with students who meet eligibility as documented on IEP. Should be specific to individual student.**	● Bilingual Glossary ● Bilingual Dictionary ● Extended Time ● Reading Aloud of Text ● Oral Translation ● Clarification in English of Word Meaning