Unit 4: Bringing Your Digital Model to Life with 3D Rendering

Content Area: **Technology**
Course(s):
Time Period: **December**
Length: **4 Weeks**
Status: **Published**

Enduring Understandings

1. Material choices are a critical part of a final design

2. Materials can be communicated both visually and physically with samples

3. Material properties can be modified to achieve rendering objectives.

4. Lighting is a critical aspect of a good rendering

Essential Questions

1. How does lighting type affect a rendering output and a physical environment?

2. How does light positioning affect a rendering output?

3. How do material choices affect a final design?

4. How does a material respond to the lighting environment?

5. What are the different types of rendering materials? How can they manipulated to achieve your desired end result?

Content

Rendering, Aspect Ratio, Material, Emissive, Dome Light, Orb Light, Panel Light, Fresnel, Refraction Layer, Reflection Layer, Bump Maps, Texture Maps, Displacement, Image Resolution, Environment Lighting

Skills

1. Students will be able to render a design with multiple views

2. Students will be able to position lights with in the rendering environment

3. Students will be able to change material properties to achieve rendering objectives.

4. Students will be able to choose specific views of the design that communicate effectively.

Resources

Sketchup Up (Latest Version), VRay Plugin (Latest Version), Softplan Rendering

Standards

9.3.12.AC-DES.7 - Employ appropriate representational media to communicate concepts and project design.

CTE 9.3.12.AC-DES.6 - Apply the techniques and skills of modern drafting, design, engineering and construction to projects.

8.1.12.A.1 - Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.

CTE 9.3.12.AC.1 - Use vocabulary, symbols and formulas common to architecture and construction.