



Digital Literacy III: The Internet & Beyond

Unit 3 Computer Aided Design

LAB 1 Creating 3-D Models (Instructor)

Explanation

In this lab, students will create three-dimensional digital models using SketchUp Make, and demonstrate the models using camera and movement tools.

Prompts

There are no prompts for this lab.

Assessment Rubric

CRITERIA	POOR 0-2	FAIR 3-5	GOOD 6-8	EXCELLENT 9-10	Score
Basic 3D Objects	Understands that 3D objects derive from 2D shapes e.g. cylinder from a circle; able to draw a 2D circle and rectangle, and saves the project	Meets the previous criteria and is also able to use and modify the polygon tool to draw a 2D triangle	Meets the previous criteria and more specifically is able to draw each 2D shape in the orientation and along the axes shown in the lab procedure	Meets the previous criteria and uses the push/pull tool to transform a 2D shape into a 3D object	
Sphere and Cone	Understands the methodology to create a sphere and cone with intersecting shapes and draws the correct shapes	Meets the previous criteria and aligns the intersecting shapes correctly and precisely using inference points	Meets previous criteria and knows to use the Follow Me tool to create a sphere or cone but is unable to use the tool effectively	Draws a sphere and a cone; for maximum score, also draws the objects in the orientation and along the axes shown in the lab procedure	
Curved Pipe	Understands the method to make a curved pipe and knows the shapes that are required (line, arc, circle)	Able to draw lines, arcs, and circles but has difficulty joining the shapes accurately and/or properly	Precisely draws and connects the necessary lines, arcs, and circles, but has difficulty using the Follow Me tool	Draws a curved pipe in the orientation and along the axes shown in the lab procedure	
Bolt and Washer Assembly	Able to create the bolt and washer as two separate objects with the given measurements	Meets the previous criteria and precisely inserts the bolt into the washer; also uses orbit and zoom tools to verify the drawing is a complete and accurate model	Meets the previous criteria and is also able to display and re-position dimension lines	Draws the 3D model as shown in the procedure and also demonstrates the model by moving the bolt up and down and rotating it independent of the washer	





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