Southmoreland School District
CAD 3D Curriculum Overview

Three Dimensional Computer Aided Drafting (Inventor)

Overview:

This course will reinforce geometric language used from CAD 2D and introduce three-dimensional modeling through Inventor software. Students will develop three-dimensional models and present using orthographic projection while reinforcing dimensioning and annotative skills acquired in CAD 2D. Exported models can be 3D printed or assembled into models showing multiple parts. Inventor software is available for students to use on their own personal computer and it is strongly encouraged!
Prerequisite: *CAD 2D*

Module Titles:

Module 1: Basic Figures
Module 2: Part Files
Module 3: Drawing Files
Module 4: Assembly Files
Module 5: Presentation Files

Module Overviews:

Module 1: Basic Figures
As an introduction to the format and tools of Inventor, students will develop common basic three dimensional figures using three dimensional modeling tools such as extrude and revolve.

Module 2: Part Files
All three dimensional parts must start as a part file (ipt) in Inventor. Replicating example parts will lead to developing parts on their own. Students will understand that developing a full three dimensional part will take a series of steps and sketches followed by a three dimensional modeling tool.

Module 3: Drawing Files
Part files will be presented orthographically in a drawing file. Students will reinforce skills from AutoCAD by presenting and annotating drawings with appropriate dimensions and labels within a proper title block.

Module 4: Assembly Files

Assembly files are made by constraining multiple part files together. Students will propose a full assembly project that will contain a minimum of (4) different part files that will then be constrained together.

Module 5: Presentation Files

Technical illustrations include various presentation methods including creating exploded views, where parts are blown apart to show assembly, parts are identified with balloons, and typically include a bill of materials that include the part number, part name, material, and rough dimensions.