



Southmoreland School District CAD 2D Curriculum Overview

Two Dimensional Computer Aided Drafting (AutoCAD)

Overview:

This course will provide an introduction to computer aided drafting through the use of AutoCAD two- dimensional software. Students will apply and reinforce Geometric terminology as well as interpreting technical illustrations to enhance their competency of AutoCAD and computer based skills. Students will focus on accuracy of drawings, presentation, and analyzing dimensions and annotations to understand technical illustrations used in a variety of industry settings. AutoCAD software is available for students to use on their own personal computer and it is strongly encouraged!

Module Titles:

Module 1: Inch Measurement

Module 2: AutoCAD [Geometric] Terminology

Module 3: Analyzing Technical Illustrations

Module 4: Title Block

Module 5: AutoCAD Tools

Module 6: Orthographic Projection

Module Overviews:

Module 1: Inch Measurement

Students will reinforce inch measurement to 1/16th of an inch on paper and practical use of a ruler. Students will gain exposure to decimal conversions which will be necessary when entering measurement in AutoCAD.

Module 2: AutoCAD [Geometric] Terminology

Students will reinforce basic geometric shapes and their properties. Knowledge of these properties are key in the development of technical illustrations.

Module 3: Analyzing Technical Illustrations

Students will review annotations of technical illustrations to determine part dimensions, material estimation and costs, and feature locations of example parts. This will require simple mathematical calculations and geometric theorems to solve for unknown values. This will translate into coordinate geometry as entered into AutoCAD.



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Module 4: Title Block

Students will develop a title block template to submit all drawing assignments. This is key in the presentation of final drawings to include drawer, date, title, and scale. This reinforces the need for title blocks in industry in regards to scale, units, and revision stamps which are included on all parts manufactured.

Module 5: AutoCAD Tools

This will be an ongoing module throughout the course and will build with time. Learning the tools via the toolbar ribbon or keystroke commands will lead to success with the software. Basic introductory tools include drawing lines, rectangles and circles. Students will apply appropriate annotations in regards to dimensions and labels for drawing presentation. Further tools will be added throughout the course.

Module 6: Orthographic Projection

In preparation for the three dimensional course, students will begin to analyze a three dimensional isometric view and project it orthographically showing the front, top and right side views. Additional annotations such as center marks and hidden lines will be added to present the view. Key takeaways will be alignment of the views and accuracy of the drawings. This will allow students to transition into the three dimensional course and Inventor software easier looking at the figure from multiple views.