

Computer Aided Drafting and Design (Grades 9-12)

Computer Aided Drafting and Design

A Computer Aided Drafting and Design CADD

- 1 Demonstrate an understanding of the historical and current events related to CADD and the impact on society. CADD.01
 - a Develop a timeline showing important periods that have significance to CADD and explain the impact on society. CADD.01.01
 - b Evaluate current events that have relevance to process digital information. CADD.01.02
 - c Describe the development of graphic language in a digital age. CADD.01.03
 - d Explain the significance of the development Computer Aided Drafting and Design had on society. CADD.01.04

- 2 Analyze the use of current CADD design technology. CADD.02
 - a Apply conventional Computer Aided Drafting and Design processes and procedures accurately, appropriately, and safely. CADD.02.01
 - b Describe physical objects as geometric entities.* CADD.02.02
 - c Describe and demonstrate the process of using a mechanical or electronic caliper accurately as required by the design intent.*(A2) CADD.02.03
 - d Describe and demonstrate the use of graphic communication skills through sketching.*(A3) CADD.02.04
 - e Evaluate and select appropriate method of communication for a given problem.* CADD.02.05
 - f Send and access information through a network.*(A4) CADD.02.06
 - g Express a design of an object as a 3D model.*(A5) CADD.02.07
 - h Export and import images/files in a variety of file formats*(A6) CADD.02.08
 - i Evaluate the choice and placement of dimensions, notes and annotations to clearly communicate design intent.*(A7) CADD.02.09
 - j Revise a design and update finished drawings appropriately.*(A8) CADD.02.10
 - k Identify basic geometric elements (e.g., line, circle, rectangle, sphere, and cube).*(A9) CADD.02.11
 - l Describe objects as geometric entities.*(A1) CADD.02.12
 - m Describe and apply the following basic geometric concepts to building 3D models: tangent and parallel concentric.*(A10) CADD.02.13
- 3 Utilize measurement and annotation systems as they apply to CADD technology design. CADD.03
 - a Explain how the various measurement systems are used in CADD drawings. CADD.03.01
 - b Describe the measurement standards used in the manufacturing industry. CADD.03.02
 - c Determine the proper dimensioning styles for a variety of applications. CADD.03.03
 - d Apply dimensioning to various objects and features. CADD.03.04
 - e Edit a dimension by using various editing methods. CADD.03.05
 - f Demonstrate the processes of lettering and text editing. CADD.03.06
 - g Develop drawings using notes and specifications. CADD.03.07
 - h Demonstrate the methods of creating a title block. CADD.03.08

- 4 Identify, describe, and utilize the basic hardware and operating systems used in CADD. CADD.04
 - a Identify and describe various types of hardware and software.*(B11) CADD.04.01
 - b Identify and describe the purpose of operating system components.*(B12) CADD.04.02
 - c Define and apply computer terminology*(B13) CADD.04.03
 - d View file names of a storage device.*(C14) CADD.04.04
 - e Store, copy, move, and retrieve information to/from various drives.*(C15) CADD.04.05
 - f Rename and backup files*(C16) CADD.04.06
 - g Identify the hardware requirements of a given CADD software package. CADD.04.07
- 5 Utilize Proper projection techniques to develop orthographic and pictorial drawings. CADD.05
 - a Understand the commands and concepts necessary for producing drawings through traditional or computer-aided means. CADD.05.01
 - b Understand the orthographic projection process for developing multi-view drawings. CADD.05.02
 - c Differentiate the various techniques for viewing objects. CADD.05.03
 - d Use the concepts of geometric construction in the development of design drawings. CADD.05.04
 - f Create orthographic, isometric, section, and auxiliary views.(E25) CADD.05.06
 - g Explain the Cartesian Coordinate System.*(E20) CADD.05.07
 - h Describe the process for setting and editing drawing elements.*(E21) CADD.05.08
 - i Create and edit line types, colors and layers/levels.*(E22) CADD.05.09
 - j Create and edit basic geometry.*(E23) CADD.05.10
 - k Place and edit text and fonts.*(E24) CADD.05.11
 - l Explain and demonstrate the process for creating orthographic, isometric, section views, and auxiliary view.* CADD.05.12
 - m Place and edit dimensions.*(E26) CADD.05.013
 - n Generate a 2-D multi-view drawing.*(E27) CADD.05.14
 - o Generate a pictorial drawing.*(E28) CADD.05.15
 - p Scale and print hard copy of an output device.*(E29) CADD.05.16
 - q Explain the use and need for scaled drawings.*(E30) CADD.05.17

- 6 Demonstrate use and application of alternate view applications and functions. CADD.06
 - a Identify the function of alternate views. CADD.06.01
 - b Demonstrate the use of cutting planes to clarify hidden features of an object. CADD.06.02
 - c Create and edit construction planes through reference geometry.* (G35) CADD.06.03
 - d Generate/modify geometric components on construction planes.* CADD.06.04
 - e Create a 2-D drawing from a 3-D model.*(G34) CADD.06.05
 - f Create a 3-D model from a 2-D drawing.*(G35) CADD.06.06
- 7 Create assemblies and views in 3-D format. CADD.07
 - a Create an assembly in 3-D geometry.*(F31) CADD.07.01
 - b Create an exploded view of a 3-D assembly.*(F32) CADD.07.02
- 8 Explain and Utilize the concepts of sketching and the sketching process used in preliminary design and development. CADD.08
 - a Produce proportional two- and three-dimensional sketches and designs. CADD.08.01
 - b Use sketching techniques as they apply to a variety of objects. CADD.08.02
 - c Use freehand graphic communication skills to represent conceptual ideas, analysis, and design concepts. CADD.08.03
 - d Explain the purpose of sketching and how it applies to design. CADD.08.04
- 9 Identify various symbols to interpret and read technical drawings. CADD.09
 - a Interpret basic views and dimensions in a working drawing.*(D17) CADD.09.01
 - b Identify geometric tolerance symbols.*(D18) CADD.09.02
 - c Interpret drawings, pictures, and symbols.*(D19) CADD.09.03
- 10 Maintain a portfolio to document knowledge, skills, materials and experience in CADD. CADD.10
 - a Gather educational and work highlights to include in portfolio. CADD.10.01
 - b Organize and provide a compact disc, web site and/or other digital media for use in demonstrating knowledge, skills, and experience. CADD.10.02
 - c Prepare and conduct effective portfolio oral presentation(s). CADD.10.03