



Nebraska Career Pathways Project

SKILLED AND TECHNICAL SCIENCES

**Architecture and Construction Cluster Technical Knowledge and Skills  
High School/College Technical Drafting Student Checklist**

				STUDENT:	DATE:
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>N = Not Exposed to Performance Element, 1 = Progressing with Performance Element, 2 = Mastery of Performance Element</b>	
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Select the appropriate scale for the given drawing problem according to American National Standards Institute (ANSI) standards (TD.SC)</b>	
			<b>TD.SC.1</b>	<i>Derive proper scaling and dimensions acceptable to industrial requirements on each assigned drawing</i>	
			<b>TD.SC.2</b>	<i>Explain the different types of scales utilized in technical drafting and how they are used for measurements</i>	
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Apply sketching knowledge and techniques to solve the problem identified by the technical committee according to ANSI standards (TD.SK)</b>	
			<b>TD.SK.1</b>	<i>Identify the types of sketches</i>	
			<b>TD.SK.2</b>	<i>Make freehand drawings to solve problems and convey ideas</i>	
			<b>TD.SK.3</b>	<i>Sketch to correct proportional sizes</i>	
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Apply knowledge of orthographic projections to solve technical drafting problems according to ANSI standards (TD.OP)</b>	
			<b>TD.OP.1</b>	<i>Explain the Theory of Orthographic Projection and how it relates to technical drafting</i>	
			<b>TD.OP.2</b>	<i>Draw two-dimensional orthographic projections from given three-dimensional views</i>	
			<b>TD.OP.3</b>	<i>Apply the principles of orthographic projection using CAD</i>	
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Utilize knowledge of auxiliary views to solve technical drafting problems according to ANSI standards (TD.AV)</b>	
			<b>TD.AV.1</b>	<i>Describe the true shape and size of incline and oblique surfaces in the form of "helper views" projected upon auxiliary planes</i>	
			<b>TD.AV.2</b>	<i>Demonstrate how and determine when to use single and double auxiliary views</i>	

<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Apply knowledge of sectioning to solve technical drafting problems according to ANSI standards (TD.SEC)</b>
			<b>TD.SEC.1</b>	<i>Explain the purpose and theory of sectioning</i>
			<b>TD.SEC.2</b>	<i>Describe the different types of sectioning</i>
			<b>TD.SEC.3</b>	<i>Represent complex interior detail by using sectioning</i>
			<b>TD.SEC.4</b>	<i>Represent different materials through the use of appropriate cross-hatching line symbols</i>
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Implement techniques in dimensioning and tolerances including geometric dimensioning and tolerances to solve technical drafting problems according to ANSI standards (TD.DT)</b>
			<b>TD.DT.1</b>	<i>Define basic tolerances terminology</i>
			<b>TD.DT.2</b>	<i>Demonstrate correct dimensioning techniques and symbol applications</i>
			<b>TD.DT.3</b>	<i>Explain the theory of dimensioning</i>
			<b>TD.DT.4</b>	<i>Identify dimensioning styles and methods</i>
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Apply knowledge of detail and assembly drawings (TD.DA)</b>
			<b>TD.DA.1</b>	<i>Construct a detail drawing showing all necessary information</i>
			<b>TD.DA.2</b>	<i>Construct an assembly drawing showing all necessary information and details</i>
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Demonstrate knowledge of fasteners and hardware (TD.FH)</b>
			<b>TD.FH.1</b>	<i>List the common types of fasteners</i>
			<b>TD.FH.2</b>	<i>Draw and label fasteners correctly on production, assembly drawings and parts lists</i>
			<b>TD.FH.3</b>	<i>Draw threaded fasteners using detailed and schematic representations</i>
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Demonstrate knowledge of presentation/pictorial drawings (TD.PP)</b>
			<b>TD.PP.1</b>	<i>Explain the three basic types of pictorial drawing</i>
			<b>TD.PP.2</b>	<i>Make drawings that represent all three dimensions in one single view using all three types of pictorials</i>
			<b>TD.PP.3</b>	<i>Apply the procedures and techniques of drawing pictorial sections and exploded views using CAD</i>
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Demonstrate knowledge of construction materials and methods (TD.MM)</b>
			<b>TD.MM.1</b>	<i>Explain use of materials and specifications for each</i>
			<b>TD.MM.2</b>	<i>List the manufacturing processes typically used today</i>
			<b>TD.MM.3</b>	<i>Describe the roll quality control plays in manufacturing</i>
			<b>TD.MM.4</b>	<i>Explain power transmission</i>
			<b>TD.MM.5</b>	<i>Describe sheet metal developments</i>

<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>3-D model and Drawing (TD.MD)</b>
			<b>TD.MD.1</b>	<i>Utilize CAD software to create a computer generated 3-D model and drawing</i>
<b>2</b>	<b>1</b>	<b>N</b>	<b>CODE</b>	<b>Apply reference materials and relevant mathematical formulas to assigned problems (TD.RM)</b>
			<b>TD.RM.1</b>	<i>Calculate mass properties including but not limited to volume, density and force</i>
			<b>TD.RM.2</b>	<i>Calculate volume measurements from given mathematical problems</i>
			<b>TD.RM.3</b>	Use reference materials to effectively solve technical drafting problems assigned to meet ANSI standards