

# Performance Based Skill Assessment

## CAD / CAM / Prototyping

CTE Regions 2A and 2C, May 2012

	Content	4	3	2	1	
Group & Order	Planning Skill Sets	Exemplary	Proficient	Developing	Limited	Assessment
<b>A1</b>	<p><b>Process Planning</b></p> <p><b>MNPA10.02</b> - Implement manufacturing processes to manage production of new and/or improved products.</p>	<p>The student is able to <b>set goals</b> that are <b>reachable</b> and identify <b>all of the necessary</b> materials, and information to reach the goal.</p>	<p>The student can set goals that are <b>for the most part reachable</b> and identify <b>most of the necessary</b> materials, and information to reach the goal.</p>	<p>The student is <b>unable</b> to set goals that <b>neither</b> are reachable <b>nor</b> identify all of the necessary materials, and information to reach the goal.</p>	<p>The student has <b>no concept</b> of their success and achieving their goals. They <b>can't</b> identify the necessary materials and information to reach the goal.</p>	
<b>A2</b>	<p><b>Time Frame</b></p> <p><b>MNPA10.06</b> - Improve production processes in order to achieve manufacturing goals and meet customer and product standards.</p>	<p>The student can <b>identify</b> a time frame for achieving the goal that is <b>realistic</b> and meets project expectations.</p>	<p>The student can <b>generally identify</b> a time frame for achieving the goal that is <b>realistic</b> and meets teacher expectations.</p>	<p>The student is <b>unable</b> to identify a <b>reasonable</b> time frame that meets teacher expectations.</p>	<p>The student has <b>unrealistic</b> expectations of time to complete task or <b>does not</b> give a time frame.</p>	

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B1	<p><b>Measurements &amp; Sketch Accuracy</b></p> <p><b>MNPJ10.01</b> - Apply measurement and scale concepts in drafting and design.</p> <p><b>MNPJ10.03</b> - Create technical sketches using drafting procedures.</p>	<p>All dimension and features of the drawing are present.</p> <p>Measurements are appropriate for project. I.e. trailer, gears.</p>	<p>Most dimensions and features are present.</p> <p>As specified to project drawing is nearly complete.</p>	<p>Part cannot be made close enough for a successful part to be produced.</p> <p>Some features are missing.</p>	<p>Most features are missing.</p> <p>Lines are missing.</p> <p>Drawing barely started.</p> <p>The design is unrecognizable.</p>	

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B2	<p><b>2D CAD Drawing</b></p> <p>MNPJ10.04 - Use a CADD system and procedures.</p>	<p>Drawing is <b>complete</b> and <b>without errors</b>.</p> <p><b>All</b> lines are present. Arcs and lines are to <b>proper size</b>.</p>	<p>Drawing is <b>nearly complete</b>.</p> <p><b>All</b> lines are present. Arcs and lines are to <b>proper size</b>.</p>	<p>Drawing is <b>incomplete</b>.</p> <p><b>Some</b> lines are present.</p> <p><b>Most</b> arcs and lines are to proper size.</p>	<p>Drawing <b>barely</b> started.</p> <p><b>Almost no</b> sizes are correct.</p> <p>Very few lines are shown.</p>	
B3	<p><b>Solid Part / Pictorial Representative</b></p> <p>MNPJ10.04 - Use a CADD system and procedures.</p> <p>MNPJ10.05 - Detail projection views/components.</p>	<p>The student has <b>used the given dimensions and correct commands</b> to create a <b>precise representation</b> of the selected solid parts / pictorial representation.</p>	<p>The student has used the <b>given dimensions and correct commands</b> to create an <b>accurate representation</b> of the selected solid parts / pictorial representation <b>without significant errors</b>.</p>	<p>The student has used <b>some</b> of the given dimensions and <b>incorrect</b> commands to create a representation of the selected solid parts / pictorial representation with <b>errors</b>.</p>	<p>The student has <b>made an attempt</b> to create a solid object that represents the given project.</p>	

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<b>C1</b>	<p><b>Safety check and pre-startup inspection</b></p> <p><b>MNPA06.01</b> - Monitor, promote and maintain a safe and productive workplace using a variety of techniques and solutions to ensure safe production of products.</p>	<p>All safety procedures followed and executed.</p> <p>All machine requirements followed and problems <b>anticipated</b>.</p>	<p>All safety procedures followed.</p> <p>All machine requirements followed.</p>	<p><b>Inadequately</b> followed safety procedures.</p> <p><b>Inadequately</b> followed machine requirements.</p>	<p><b>Neglected</b> to follow safety procedures.</p> <p><b>Neglected</b> to follow machine requirements.</p>	
<b>C2</b>	<p><b>Make Part</b></p> <p><b>MNPA10.02</b> - Implement manufacturing processes to manage production of new and/or improved products.</p> <p><i>(This section can be omitted if program does not have production capabilities. Student can use external production facility).</i></p>	<p><b>Assisted</b> others.</p> <p><b>Innovate</b> concept.</p> <p>Produced part <b>without help</b>.</p>	<p>Applies <b>correct</b> technology.</p> <p>Setup and operates proper machine for <b>acceptable</b> product.</p> <p><b>Efficient</b> use of material and machine time.</p>	<p><b>Incorrect</b> choice of technology.</p> <p><b>Needs assistance</b> with setup and operation of machine.</p> <p><b>Wasteful</b> of material and machine time.</p>	<p>Unable to make part.</p> <p><b>Needs ongoing assistance</b> with setup and operation of machine.</p> <p><b>Wrong or incorrect</b> use of material and machine time.</p>	

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<b>C3</b>	<p><b>Part Inspection</b></p> <p><b>MNPA10.01-</b> Produce a product that demonstrates the relationship between production processes and meeting customer needs.</p> <p><b>MNPA10.01.05.09 -</b> Inspect the product to verify that it meets specifications.</p>	<p>Part has <b>no visible</b> production imperfections: burrs, chips, cracks, stress points and has crisp edges as called for.</p>	<p>Part has a <b>minor</b> production <b>flaw</b> as a: burr, chip, crack, stress point or on an edge.</p>	<p>Part has <b>multiple / minor</b> production errors or <b>1 major</b> error.</p>	<p>So many visible flaws on part that it is <b>unusable</b> or unrecognizable.</p>	
<b>C4</b>	<p><b>Part Fit / Function</b></p> <p><b>MNPA10.01 -</b> Produce a product that demonstrates the relationship between production processes and meeting customer needs.</p>	<p>Produced part(s) fits to model <b>extremely</b> well with other parts.</p> <p><b>No</b> binding, skips, glitches or hitches.</p> <p>Functions as <b>planned</b>.</p>	<p>Part(s) fits <b>well</b>.</p> <p><b>Minor</b> binding, skip, glitch or hitch present.</p>	<p>Part(s) are <b>not</b> a good fit.</p> <p>Part(s) <b>hang-up</b> and are not smoothly running.</p>	<p>Part(s) are <b>incomplete</b> for fitting.</p>	

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Group & Order	Communication Skill Sets	Exemplary	Proficient	Developing	Limited	Assessment
D1	<p><b>Writing- Ideas and Content</b></p> <p><b>MNPA02.01</b> - Communicate with others to ensure that the manufacturing production process meets requirements.</p>	<p>The writing is <b>exceptionally</b> clear, focused, and <b>interesting</b>. It <b>holds</b> the reader's attention throughout.</p>	<p>The writing is <b>clear</b> and <b>focused</b>.</p> <p>The reader can easily <b>understand</b> the main ideas. <b>Support is present</b>, although it may be limited or rather <b>general</b>.</p>	<p>Main ideas and purpose are somewhat <b>unclear</b>.</p> <p>Development is attempted but <b>minimal</b>.</p>	<p>The writing <b>lacks</b> a central idea or purpose.</p> <p>The writing has <b>no</b> identifiable main idea.</p>	
D2	<p><b>Speaking- Ideas and Content</b></p> <p><b>MNPA02.01</b> - Communicate with others to ensure that the manufacturing production process meets requirements.</p>	<p>The content is <b>extremely</b> clear, <b>focused</b> and well-suited to audience and purpose.</p> <p>Main ideas <b>significantly</b> draw the audience's attention and are developed by strong and <b>compelling</b> supporting <b>details</b>.</p>	<p>The content is <b>clear</b>, <b>focused</b>, and appropriate to audience and purpose.</p> <p>Support is present although it may be <b>limited</b> or <b>general</b>.</p>	<p>The content is appropriate to audience and purpose although it may be <b>overly broad</b> or <b>simplistic</b>.</p> <p>Support is present but may <b>lack development</b> or relevance.</p>	<p>The content <b>lacks</b> an apparent purpose or central theme.</p>	