

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

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B1	<p>Measurements & Sketch Accuracy</p> <p>MNPJ10.01 - Apply measurement and scale concepts in drafting and design.</p> <p>MNPJ10.03 - 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>2D CAD Drawing</p> <p>MNPJ10.04 - Use a CADD system and procedures.</p>	<p>Drawing is complete and without errors.</p> <p>All lines are present. Arcs and lines are to proper size.</p>	<p>Drawing is nearly complete.</p> <p>All lines are present. Arcs and lines are to proper size.</p>	<p>Drawing is incomplete.</p> <p>Some lines are present.</p> <p>Most arcs and lines are to proper size.</p>	<p>Drawing barely started.</p> <p>Almost no sizes are correct.</p> <p>Very few lines are shown.</p>	
B3	<p>Solid Part / Pictorial Representative</p> <p>MNPJ10.04 - Use a CADD system and procedures.</p> <p>MNPJ10.05 - Detail projection views/components.</p>	<p>The student has used the given dimensions and correct commands to create a precise representation of the selected solid parts / pictorial representation.</p>	<p>The student has used the given dimensions and correct commands to create an accurate representation of the selected solid parts / pictorial representation without significant errors.</p>	<p>The student has used some of the given dimensions and incorrect commands to create a representation of the selected solid parts / pictorial representation with errors.</p>	<p>The student has made an attempt to create a solid object that represents the given project.</p>	

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C1	<p>Safety check and pre-startup inspection</p> <p>MNPA06.01 - 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 anticipated.</p>	<p>All safety procedures followed.</p> <p>All machine requirements followed.</p>	<p>Inadequately followed safety procedures.</p> <p>Inadequately followed machine requirements.</p>	<p>Neglected to follow safety procedures.</p> <p>Neglected to follow machine requirements.</p>	
C2	<p>Make Part</p> <p>MNPA10.02 - 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>Assisted others.</p> <p>Innovate concept.</p> <p>Produced part without help.</p>	<p>Applies correct technology.</p> <p>Setup and operates proper machine for acceptable product.</p> <p>Efficient use of material and machine time.</p>	<p>Incorrect choice of technology.</p> <p>Needs assistance with setup and operation of machine.</p> <p>Wasteful of material and machine time.</p>	<p>Unable to make part.</p> <p>Needs ongoing assistance with setup and operation of machine.</p> <p>Wrong or incorrect use of material and machine time.</p>	

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

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