

Machine Tool Technology/Machinist (CIP 48.0501)
Units of Instruction and Task Grid Linked To PA Common Core Standards

Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
100 ORIENTATION / SAFETY				
101 Describe the Occupational Safety and Health Administration (OSHA) and its role in the machining industry.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7	KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12) <ul style="list-style-type: none"> • Standard CC.3.5.9-10.A • Standard CC.3.5.11-12.A Cite specific textual evidence, etc.. <ul style="list-style-type: none"> • Standard CC.3.5.9-10.B • Standard CC.3.5.11-12.B Determine the central ideas or conclusions of a text; etc. <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc..	TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12) <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A Write arguments focused on discipline-specific content. <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12) <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C -Produce clear and coherent writingappropriate to task, purpose, and audience. <ul style="list-style-type: none"> • Standard CC.3.6.9-10.D • Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E Use technology, including the Internet, to produce, publish, and update	
102 Identify & explain safety equipment and procedures.	CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6	CRAFT & STRUCTURE (FOR GRADES 9-10-11-12) <ul style="list-style-type: none"> • Standard CC.3.5.9-10.D • Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words. <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.		
103 Identify & explain general safety precautions.				
104 Identify & describe personal/lab safety requirements.				
105 Explain Right to Know Law.	NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.			
106 Explain location of MSDS.				
107 Explain potential hazardous trade materials.				

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		<p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. H</u> <p>Assess the reasoning in a text to support the author’s claim for solving a technical problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. I</u> <p>Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. G</u> <p>Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. H</u> <p>Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. I</u> <p>Synthesize info. from a range of sources into a coherent understanding .</p> <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.J</u> • <u>Standard CC.3.5.11-12.J</u> <p>By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>individual or shared writing products.</p> <p>RESEARCH (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.F</u> • <u>Standard CC.3.6.11-12.F</u> <p>Conduct short and more sustained research to answer a question or solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.G</u> • <u>Standard CC.3.6.11-12.G</u> <p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.H</u> • <u>Standard CC.3.6.11-12.H</u> <p>Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.I</u> • <u>Standard CC.3.5.11-12.I</u> <p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	

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200 PERFORM LAYOUT WORK.				
201 Perform layout work for NIMS certification.	<p style="background-color: #d9ead3;">CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7</p> <p style="background-color: #d9ead3;">CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6</p> <p style="background-color: #d9ead3;">NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p style="background-color: #d9ead3;">KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12 A Cite specific textual evidence, etc.. • Standard CC.3.5.9-10 B • Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.. <p style="background-color: #d9ead3;">CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words. • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text. <p style="background-color: #d9ead3;">INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G 	<p style="background-color: #d9ead3;">TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A Write arguments focused on discipline-specific content. • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. <p style="background-color: #d9ead3;">PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12 C -Produce clear and coherent writing ... appropriate to task, purpose, and audience. • Standard CC.3.6.9-10 D • Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E Use technology, including the Internet, to produce, publish, and update 	<p style="background-color: #d9ead3;">MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p style="background-color: #d9ead3;">STANDARD AREA: ALGEBRA</p> <p style="background-color: #d9ead3;">Standard 2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios.</p> <p style="background-color: #d9ead3;">STANDARD AREA: GEOMETRY</p> <p style="background-color: #d9ead3;">Standard 2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles.</p>
202 Prepare materials for layout.				
203 Identify and use basic & precision layout tools.				

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300 INSPECT PARTS.				
301 Identify, care and use of precision measuring instruments.	<p style="background-color: #e6ffe6;">CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7</p> <p style="background-color: #e6ffe6;">CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6</p> <p style="background-color: #e6ffe6;">NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p style="background-color: #e6f2ff;">KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12. A Cite specific textual evidence, etc.. • Standard CC.3.5.9-10. B • Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. • Standard CC.3.5.9-10. C • Standard CC.3.5.11-12. C Follow precisely a complex multistep procedure, etc.. <p style="background-color: #e6f2ff;">CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12. D Determine the meaning of symbols, key terms, and other domain-specific words. • Standard CC.3.5.9-10. E • Standard CC.3.5.11-12. E Analyze the structure of the relationships among concepts in a text, etc. • Standard CC.3.5.9-10. F • Standard CC.3.5.11-12. F Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text. <p style="background-color: #e6f2ff;">INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. G 	<p style="background-color: #ffe6e6;">TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A Write arguments focused on discipline-specific content. • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. <p style="background-color: #ffe6e6;">PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C -Produce clear and coherent writing ... appropriate to task, purpose, and audience. • Standard CC.3.6.9-10.D • Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E Use technology, including the Internet, to produce, publish, and update 	<p style="background-color: #ffe6e6;">MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p style="background-color: #ffe6e6;">STANDARD AREA: ALGEBRA</p> <p style="background-color: #ffe6e6;">Standard 2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios.</p> <p style="background-color: #ffe6e6;">STANDARD AREA: GEOMETRY</p> <p style="background-color: #ffe6e6;">Standard 2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles.</p>
302 Calibrate precision measuring instruments.				
303 Describe methods used for quality control.				

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400 PERFORM BENCH WORK.				
401 Demonstrate safety procedures when performing bench work .	<p style="background-color: #e6ffe6;">CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7</p> <p style="background-color: #e6ffe6;">CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6</p> <p style="background-color: #e6ffe6;">NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p style="background-color: #e6f2ff;">KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12 A Cite specific textual evidence, etc.. • Standard CC.3.5.9-10 B • Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.. <p style="background-color: #e6f2ff;">CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words. • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text. <p style="background-color: #e6f2ff;">INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G 	<p style="background-color: #ffe6e6;">TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A Write arguments focused on discipline-specific content. • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. <p style="background-color: #ffe6e6;">PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12 C -Produce clear and coherent writing ... appropriate to task, purpose, and audience. • Standard CC.3.6.9-10 D • Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E Use technology, including the Internet, to produce, publish, and update 	<p style="background-color: #ffe6e6;">MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>
402 Cut material with a hand hacksaw.				
403 File work to specifications.				
404 Cut threads with hand taps and dies.				
405 Assemble and disassemble parts.				
406 Identify and use bench hand tools.				
407 Identify & use a hand arbor and/or hydraulic press.				

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		<p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. H</u> <p>Assess the reasoning in a text to support the author’s claim for solving a technical problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. I</u> <p>Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. G</u> <p>Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. H</u> <p>Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. I</u> <p>Synthesize info. from a range of sources into a coherent understanding .</p> <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.J</u> • <u>Standard CC.3.5.11-12.J</u> <p>By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>individual or shared writing products.</p> <p>RESEARCH (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.F</u> • <u>Standard CC.3.6.11-12.F</u> <p>Conduct short and more sustained research to answer a question or solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.G</u> • <u>Standard CC.3.6.11-12.G</u> <p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.H</u> • <u>Standard CC.3.6.11-12.H</u> <p>Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.I</u> • <u>Standard CC.3.5.11-12.I</u> <p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	

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Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
500 OPERATE DRILL PRESSES.				
501 Demonstrate safety precautions when using the drill press .	<p style="background-color: #e6ffe6;">CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7</p> <p style="background-color: #e6ffe6;">CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6</p> <p style="background-color: #e6ffe6;">NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p style="background-color: #e6f2ff;">KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12. A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10 B • Standard CC.3.5.11-12. B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p style="background-color: #e6f2ff;">CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p style="background-color: #e6f2ff;">INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G 	<p style="background-color: #ffe6e6;">TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p style="background-color: #ffe6e6;">PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12 C <p>-Produce clear and coherent writing ...</p> <p>...appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10 D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E. <p>Use technology, including the Internet, to produce, publish, and update</p>	<p style="background-color: #ffe6e6;">MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p><u>Standard 2.1.HS.F.2</u> Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p><u>Standard 2.1.HS.F.4</u> Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p><u>Standard 2.1.HS.F.5</u> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p><u>Standard 2.1.HS.F.6</u> Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p style="background-color: #ffe6e6;">STANDARD AREA: GEOMETRY</p> <p><u>Standard 2.3.HS.A.7</u> Apply trigonometric ratios to solve problems involving right triangles.</p> <p><u>Standard 2.3.HS.A.3</u> Verify and apply geometric theorems as they relate to Geometric figures.</p> <p><u>Standard 2.3.HS.A.13</u> Analyze relationships between two-dimensional and three-dimensional</p>
502 Select and demonstrate proper use of drill work holding devices.				
503 Calculate speeds and feeds.				
504 Demonstrate the use of center drill.				
505 Select correct drill sizes for various application.				
506 Pre-drill & ream various size holes.				
507 Demonstrate counter boring, spot facing & countersinking.				
508 Pre-drill and tap holes.				
509 Grind and use flat bottom drill.				
510 Sharpen various size twist drills.				

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Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
511 Select & demonstrate work holding devices.		<p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. H</u> Assess the reasoning in a text to support the author’s claim for solving a technical problem. • <u>Standard CC.3.5.9-10. I</u> Compare and contrast findings presented in a text to those from other sources, etc. <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. G</u> Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem. • <u>Standard CC.3.5.11-12. H</u> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. • <u>Standard CC.3.5.11-12. I</u> Synthesize info. from a range of sources into a coherent understanding . <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.J</u> <u>Standard CC.3.5.11-12.J</u> <p>By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>individual or shared writing products.</p> <p>RESEARCH (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.F</u> • <u>Standard CC.3.6.11-12.F</u> <p>Conduct short and more sustained research to answer a question or solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.G</u> • <u>Standard CC.3.6.11-12.G</u> <p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.H</u> • <u>Standard CC.3.6.11-12.H</u> <p>Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.I</u> & • <u>Standard CC.3.5.11-12.I</u> <p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	objects

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Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
600 OPERATE GRINDING MACHINES.				
601 Demonstrate knowledge and application of OSHA safety rules using pedestal and surface grinding machines.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7	KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12) <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12. A Cite specific textual evidence, etc..	TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12) <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A Write arguments focused on discipline-specific content.	MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.) Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.
602 Identify parts of pedestal grinder.	CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6	<ul style="list-style-type: none"> • Standard CC.3.5.9-10. B • Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc.	<ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.	Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.
603 Demonstrate the proper way to test, mount and dress grinding wheels.		CRAFT & STRUCTURE (FOR GRADES 9-10-11-12) <ul style="list-style-type: none"> • Standard CC.3.5.9-10. C • Standard CC.3.5.11-12. C Follow precisely a complex multistep procedure, etc..	PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12) <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C -Produce clear and coherent writing ...	Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
604 Grind and sharpen various lathe tools.	NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.	Determine the meaning of symbols, key terms, and other domain-specific words. <ul style="list-style-type: none"> • Standard CC.3.5.9-10. E • Standard CC.3.5.11-12. E 	...appropriate to task, purpose, and audience. <ul style="list-style-type: none"> • Standard CC.3.6.9-10.D • Standard CC.3.6.11-12.D 	Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.
605 Grind 60 degree external and internal threading tools.		Analyze the structure of the relationships among concepts in a text, etc. <ul style="list-style-type: none"> • Standard CC.3.5.9-10. F • Standard CC.3.5.11-12. F 	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E 	STANDARD AREA: ALGEBRA Standard 2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios.
606 Grind single point radius and parting tool setters.		Analyze the author's purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.	Use technology, including the Internet, to produce, publish, and update	STANDARD AREA: GEOMETRY Standard 2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles.
607 Identify & demonstrate surface grinding safety procedures.		INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10) <ul style="list-style-type: none"> • Standard CC.3.5.9-10. G 		
608 Identify parts of surface grinder.				
609 Grind surfaces flat & parallel using a magnetic chuck.				
610 Grind work surfaces square with a vise or angle plate.				

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611 Grind precision angles using a sine plate or sine bar.		<p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. H</u> Assess the reasoning in a text to support the author’s claim for solving a technical problem. • <u>Standard CC.3.5.9-10. I</u> Compare and contrast findings presented in a text to those from other sources, etc. <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. G</u> Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem. • <u>Standard CC.3.5.11-12. H</u> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. • <u>Standard CC.3.5.11-12. I</u> Synthesize info. from a range of sources into a coherent understanding . <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.J</u> <u>Standard CC.3.5.11-12.J</u> <p>By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>individual or shared writing products.</p> <p>RESEARCH (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.F</u> • <u>Standard CC.3.6.11-12.F</u> <p>Conduct short and more sustained research to answer a question or solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.G</u> • <u>Standard CC.3.6.11-12.G</u> <p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.H</u> • <u>Standard CC.3.6.11-12.H</u> <p>Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.I</u> & • <u>Standard CC.3.5.11-12.I</u> <p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p><u>Standard 2.3.HS.A.3</u> Verify and apply geometric theorems as they relate to Geometric figures. <u>Standard 2.3.HS.A.13</u> Analyze relationships between two-dimensional and three-dimensional objects</p>

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700 OPERATE LATHES.				
701 Identify and demonstrate lathe safety procedures.	<p style="background-color: #d9ead3;">CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7</p> <p style="background-color: #d9ead3;">CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6</p> <p style="background-color: #d9ead3;">NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p style="background-color: #d9ead3;">KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12 A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10 B • Standard CC.3.5.11-12. B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p style="background-color: #d9ead3;">CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author's purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p style="background-color: #d9ead3;">INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G 	<p style="background-color: #d9ead3;">TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p style="background-color: #d9ead3;">PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12 C <p>-Produce clear and coherent writing ... appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10 D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E <p>Use technology, including the Internet, to produce, publish, and update</p>	<p style="background-color: #d9ead3;">MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p style="background-color: #d9ead3;">STANDARD AREA: GEOMETRY</p> <p style="background-color: #d9ead3;">Standard 2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles.</p> <p style="background-color: #d9ead3;">Standard 2.3.HS.A.3 Verify and apply geometric theorems as they relate to Geometric figures.</p> <p style="background-color: #d9ead3;">Standard 2.3.HS.A.13 Analyze relationships between two-dimensional and three-dimensional</p>
702 Mount and true work piece in 3-jaw and 4-jaw chucks.				
703 Align centers.				
704 Face work piece.				
705 Turn outside diameters.				
706 Turn inside and outside diameters to shoulders.				
707 Turn tapers.				
708 Demonstrate knurling.				
709 Part off & groove work piece.				
710 Cut internal and external threads.				
711 Demonstrate machine tapping for internal threads.				
712 Demonstrate filing & polishing.				

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<p>713 Demonstrate die thread cutting.</p> <p>714 Demonstrate boring.</p> <p>715 Demonstrate various tool holders and their correct uses.</p> <p>716 Demonstrate the use of a collect attachment..</p> <p>717 Demonstrate the proper lathe maintenance procedure.</p> <p>718 Demonstrate proper selection of attain various speeds and feeds.</p> <p>719 Demonstrate proper gear selection for threading operations.</p>		<p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. H</u> <p>Assess the reasoning in a text to support the author’s claim for solving a technical problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. I</u> <p>Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. G</u> <p>Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. H</u> <p>Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. I</u> <p>Synthesize info. from a range of sources into a coherent understanding .</p> <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.J</u> • <u>Standard CC.3.5.11-12.J</u> <p>By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>individual or shared writing products.</p> <p>RESEARCH (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.F</u> • <u>Standard CC.3.6.11-12.F</u> <p>Conduct short and more sustained research to answer a question or solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.G</u> • <u>Standard CC.3.6.11-12.G</u> <p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.H</u> • <u>Standard CC.3.6.11-12.H</u> <p>Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.I</u> • <u>Standard CC.3.5.11-12.I</u> <p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>objects</p>

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Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
800 OPERATE MILLING MACHINES.				
801 Identify & demonstrate safety procedures for using a milling machine.	<p style="background-color: #e6ffe6;">CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7</p> <p style="background-color: #e6ffe6;">CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6</p> <p style="background-color: #e6ffe6;">NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p style="background-color: #e6f2ff;">KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.A • Standard CC.3.5.11-12.A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.B • Standard CC.3.5.11-12.B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p style="background-color: #e6f2ff;">CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author's purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p style="background-color: #e6f2ff;">INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G 	<p style="background-color: #ffe6e6;">TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p style="background-color: #ffe6e6;">PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C <p>-Produce clear and coherent writing ... appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E <p>Use technology, including the Internet, to produce, publish, and update</p>	<p style="background-color: #ffe6e6;">MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p style="background-color: #ffe6e6;">Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p style="background-color: #ffe6e6;">MATH STANDARD AREA: ALGEBRAIC CONCEPTS</p> <p style="background-color: #ffe6e6;">Level "D" For High School: Algebra</p> <p style="background-color: #ffe6e6;">CC Standard 2.2.HS.D.1- Interpret the structure of expressions to represent a quantity in terms of its context.</p> <p style="background-color: #ffe6e6;">CC Standard 2.2.HS.D.2 - Write expressions in equivalent forms to solve</p>
802 Demonstrate trimming of milling head.				
803 Select, mount & indicate vise.				
804 Machine angles.				
805 Machine keyways.				
806 Select and demonstrate the use of face mills.				
807 Demonstrate the use of a digital indexing procedures.				
808 Demonstrate use of digital readout.				
809 Demonstrate use of edge finder.				
810 Demonstrate climb and conventional milling.				
811 Demonstrate use of adjustable boring head.				

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Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
<p>812 Calculate speeds and feeds.</p> <p>813 Install and remove cutting tool holding devices properly.</p> <p>814 Select appropriate cutter for various milling operations.</p> <p>815 Demonstrate how to "square" a part to prepare it for milling.</p>		<p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. H <p>Assess the reasoning in a text to support the author’s claim for solving a technical problem.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. I <p>Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • Standard CC.3.5.11-12. G <p>Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem.</p> <ul style="list-style-type: none"> • Standard CC.3.5.11-12. H <p>Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <ul style="list-style-type: none"> • Standard CC.3.5.11-12. I <p>Synthesize info. from a range of sources into a coherent understanding .</p> <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.J • Standard CC.3.5.11-12.J <p>By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>individual or shared writing products.</p> <p>RESEARCH (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.F • Standard CC.3.6.11-12.F <p>Conduct short and more sustained research to answer a question or solve a problem.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.G • Standard CC.3.6.11-12.G <p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.H • Standard CC.3.6.11-12.H <p>Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.I • Standard CC.3.5.11-12.I <p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>problems.</p> <p>CC Standard 2.2.HS.D.3 - Extend the knowledge of arithmetic operations and apply to polynomials.</p> <p>CC Standard HS.D.4 - Demonstrate the relationship between zeros and polynomials to make generalizations about functions and their graphs.</p> <p>CC Standard 2.2.HS.D.5 - Use polynomial identities to solve problems.</p> <p>CC Standard 2.2.HS.D.6 - Extend the knowledge of rational functions to rewrite in equivalent forms.</p> <p>CC Standard 2.2.HS.D.7 - Create and graph equations or inequalities to describe numbers or relationships.</p> <p>CC Standard 2.2.HS.D.8 - Apply inverse operations to solve equations or formulas for a given variable.</p> <p>CC Standard 2.2.HS.D.9 - Use reasoning to solve equations and justify the solution method.</p> <p>CC Standard 2.2.HS.D.10 - Represent, solve and interpret equations/inequalities and systems of equations and inequalities.</p>

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Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
				<p style="text-align: center;">MATH STANDARD AREA: 2.2 <u>ALGEBRAIC</u> <u>CONCEPTS</u> Level "C" For High School: Functions</p> <p><u>CC Standard 2.2.HS.C.1 -</u> Use the concept and notation of functions to interpret and apply them in terms of their context.</p> <p><u>CC Standard 2.2.HS.C.2 -</u> Graph and analyze functions.</p> <p><u>CC Standard 2.2.HS.C.3 -</u> Write functions or sequences that model relationships between two quantities.</p> <p><u>CC Standard 2.2.HS.C.4 -</u> Interpret the effects transformations have on functions and find the inverses of functions.</p> <p><u>CC Standard 2.2.HS.C.5 -</u> Construct and compare linear, quadratic and exponential models to solve problems.</p> <p><u>CC Standard 2.2.HS.C.6 -</u> Interpret functions in terms of the situation they model.</p> <p><u>CC Standard 2.2.HS.C.7 -</u> - Apply radian measure of an angle and the unit circle to analyze the trigonometric functions.</p> <p><u>CC Standard 2.2.HS.C.8 -</u> Choose trigonometric functions to model periodic phenomena and describe</p>

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				<p>the properties of the graphs. <u>CC Standard 2.2.HS.C.9</u> - Prove the Pythagorean identity and use it to calculate trigonometric ratios.</p> <p>MATH CURRICULUM AREA: 2.3 - GEOMETRY Level "A" For High School: Geometry</p> <p><u>CC Standard 2.3.HS.A.1</u> - Use geometric figures and their properties to represent transformations in the plane.</p> <p><u>CC Standard 2.3.HS.A.2</u> - Apply rigid transformations to determine and explain congruence.</p> <p><u>CC Standard 2.3.HS.A.3</u> - Verify and apply geometric theorems as they relate to geometric figures.</p> <p><u>CC Standard 2.3.HS.A.4</u> - Apply the concept of congruence to create geometric constructions.</p> <p><u>CC Standard 2.3.HS.A.5</u> - Create justifications based on transformations to establish similarity of plane figures.</p> <p><u>CC Standard 2.3.HS.A.6</u> - Verify and apply theorems involving similarity as they relate to plane figures.</p> <p><u>CC Standard 2.3.HS.A.7</u> - Apply trigonometric ratios to solve problems involving right triangles.</p>

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Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
				<p><u>CC Standard 2.3.HS.A.8</u> - Apply geometric theorems to verify properties of circles.</p> <p><u>CC Standard 2.3.HS.A.9</u> - Extend the concept of similarity to determine arc lengths and areas of sectors of circles.</p> <p><u>CC Standard 2.3.HS.A.10</u> - Translate between the geometric description and the equation for a conic section.</p> <p><u>CC Standard 2.3.HS.A.11</u> - Apply coordinate geometry to prove simple geometric theorems algebraically.</p> <p><u>CC Standard 2.3.HS.A.12</u> - Explain volume formulas and use them to solve problems.</p> <p><u>CC Standard 2.3.HS.A.13</u> - Analyze relationships between two-dimensional and three-dimensional objects.</p> <p><u>CC Standard 2.3.HS.A.14</u> - Apply geometric concepts to model and solve real world problems.</p>

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Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
900 OPERATE POWER SAWS.				
901 Identify & demonstrate safety procedures for operating vertical and horizontal power saws.	<p style="background-color: #d9ead3;">CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7</p> <p style="background-color: #d9ead3;">CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6</p> <p style="background-color: #d9ead3;">NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p style="background-color: #d9ead3;">KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12 A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10 B • Standard CC.3.5.11-12. B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p style="background-color: #d9ead3;">CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p style="background-color: #d9ead3;">INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p>	<p style="background-color: #d9ead3;">TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p style="background-color: #d9ead3;">PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12 C <p>-Produce clear and coherent writing ... appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10 D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E <p>Use technology, including the Internet, to produce, publish, and update individual or shared writing products.</p> <p style="background-color: #d9ead3;">RESEARCH (FOR</p>	<p style="background-color: #d9ead3;">MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>
902 Demonstrate cutting and welding of saw blades.				
903 Remove and replace saw blades.				
904 Demonstrate the three- tooth rule for selecting blades.				
905 Demonstrate accurate sawing.				
906 Select and set speeds for various sawing operations.				

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		<ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.G</u> Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart). • <u>Standard CC.3.5.9-10. H</u> Assess the reasoning in a text to support the author’s claim for solving a technical problem. • <u>Standard CC.3.5.9-10. I</u> Compare and contrast findings presented in a text to those from other sources, etc. <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. G</u> Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem. • <u>Standard CC.3.5.11-12. H</u> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. • <u>Standard CC.3.5.11-12. I</u> Synthesize info. from a range of sources into a coherent understanding . <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.J</u> <u>Standard CC.3.5.11-12.J</u> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently. 	<p>GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.F</u> • <u>Standard CC.3.6.11-12.F</u> <p>Conduct short and more sustained research to answer a question or solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.G.</u> • <u>Standard CC.3.6.11-12.G</u> <p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.H.</u> • <u>Standard CC.3.6.11-12.H.</u> <p>Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.I</u> & • <u>Standard CC.3.5.11-12.I.</u> <p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	

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Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
1000 MAINTAIN MACHINES AND TOOLS.				
1001 Demonstrate proper lubrication and maintenance of machinery.	CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7	KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12) • Standard CC.3.5.9-10.A • Standard CC.3.5.11-12.A Cite specific textual evidence, etc.. • Standard CC.3.5.9-10.B • Standard CC.3.5.11-12.B Determine the central ideas or conclusions of a text; etc. • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc..	TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12) • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A Write arguments focused on discipline-specific content. • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12) • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C -Produce clear and coherent writing ... appropriate to task, purpose, and audience. • Standard CC.3.6.9-10.D • Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E Use technology, including the Internet, to produce, publish, and update	MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.) Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.
1002 Clean and store hand tools, cutters, fixtures and attachments.	CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway			
1003 Inspect & adjust machine guards.	(Choose Standards) 1-2-3-4-5-6	CRAFT & STRUCTURE (FOR GRADES 9-10-11-12) • Standard CC.3.5.9-10.D • Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain-specific words. • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.		
1004 Select, prepare & store coolants, cutting oils and compounds.	NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.	INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10) • Standard CC.3.5.9-10.G		
1005 Inspect, clean, & maintain a safe working area.				

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		<p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. H</u> <p>Assess the reasoning in a text to support the author’s claim for solving a technical problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. I</u> <p>Compare and contrast findings presented in a text to those from other sources, etc.</p> <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. G</u> <p>Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. H</u> <p>Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. I</u> <p>Synthesize info. from a range of sources into a coherent understanding .</p> <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.J</u> • <u>Standard CC.3.5.11-12.J</u> <p>By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>individual or shared writing products.</p> <p>RESEARCH (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.F</u> • <u>Standard CC.3.6.11-12.F</u> <p>Conduct short and more sustained research to answer a question or solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.G</u> • <u>Standard CC.3.6.11-12.G</u> <p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.H</u> • <u>Standard CC.3.6.11-12.H</u> <p>Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.I</u> & • <u>Standard CC.3.5.11-12.I</u> <p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	

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Secondary Competency Task List With Unit and Task Numbers	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
1100 DEMONSTRATE KNOWLEDGE OF METALLURGY.				
1101 Identify & explain metals classifications.	<p style="background-color: #d9ead3;">CAREER CLUSTER Manufacturing Career Cluster</p> <p>(Choose Standards) 1-2-3-4-5-6-7</p> <p style="background-color: #d9ead3;">CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway</p> <p>(Choose Standards) 1-2-3-4-5-6</p> <p style="background-color: #d9ead3;">NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p style="background-color: #d9ead3;">KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12 A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10 B • Standard CC.3.5.11-12. B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p style="background-color: #d9ead3;">CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p style="background-color: #d9ead3;">INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G 	<p style="background-color: #d9ead3;">TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p style="background-color: #d9ead3;">PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12 C <p>-Produce clear and coherent writing ...</p> <p>...appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10 D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E. <p>Use technology, including the Internet, to produce, publish, and update</p>	<p style="background-color: #d9ead3;">MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.2</p> <p>Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.4</p> <p>Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.5</p> <p>Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.6</p> <p>Extend the knowledge of arithmetic operations and apply to complex numbers.</p>
1102 Identify & explain metal property applications.				
1103 Identify & explain heat-treating and annealing process.				

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		<p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10. H</u> Assess the reasoning in a text to support the author’s claim for solving a technical problem. • <u>Standard CC.3.5.9-10. I</u> Compare and contrast findings presented in a text to those from other sources, etc. <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. G</u> Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem. • <u>Standard CC.3.5.11-12. H</u> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. • <u>Standard CC.3.5.11-12. I</u> Synthesize info. from a range of sources into a coherent understanding . <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.J</u> <u>Standard CC.3.5.11-12.J</u> <p>By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>individual or shared writing products.</p> <p>RESEARCH (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.F</u> • <u>Standard CC.3.6.11-12.F</u> <p>Conduct short and more sustained research to answer a question or solve a problem.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.G</u> • <u>Standard CC.3.6.11-12.G</u> <p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.H</u> • <u>Standard CC.3.6.11-12.H</u> <p>Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.I</u> & • <u>Standard CC.3.5.11-12.I</u> <p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	

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1200 USE MACHINISTS' REFERENCES AND CHARTS.				
1201 Use the numeric-to- decimal equivalence chart..	<p>CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7</p> <p>CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6</p> <p>NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p>KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12 A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10 B • Standard CC.3.5.11-12. B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p>CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p>	<p>TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12 C <p>-Produce clear and coherent writingappropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10 D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E <p>Use technology, including</p>	<p>MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p>Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>
1202 Use machining speeds and feeds charts.				
1203 Use thread cutting charts.				
1204 Use the Machinery's Handbook to locate specific information. f or machining operations.				

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1300 READ AND DRAW BLUEPRINTS.				
1301 Identify & explain orthographic views of machine parts, and projections.	<p style="background-color: #d9ead3;">CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7</p> <p style="background-color: #d9ead3;">CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6</p> <p style="background-color: #d9ead3;">NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p style="background-color: #d9ead3;">KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12 A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10 B • Standard CC.3.5.11-12. B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p style="background-color: #d9ead3;">CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p style="background-color: #d9ead3;">INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p>	<p style="background-color: #d9ead3;">TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p style="background-color: #d9ead3;">PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12 C <p>-Produce clear and coherent writing ... appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10 D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E. <p>Use technology, including the Internet, to produce,</p>	<p style="background-color: #d9ead3;">MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p style="background-color: #d9ead3;">Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>
1302 Demonstrate basic sketching and dimensioning techniques..				
1303 Identify & explain the alphabet of lines.				
1304 Demonstrate knowledge of the rules for dimensioning machine parts, and how to apply "tolerances" and "fits" to dimensions.				
1305 Calculate material sizes based upon job needs.				
1306 Demonstrate knowledge of third angle projections.				
1307 Identify & interpret geometric dimensioning and tolerancing.				

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1400 PROGRAM COMPUTER NUMERICAL CONTROLLED (CNC) MACHINES.				
1401 Explain and demonstrate CNC safety procedures.	<p>CAREER CLUSTER Manufacturing Career Cluster (Choose Standards) 1-2-3-4-5-6-7</p> <p>CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway (Choose Standards) 1-2-3-4-5-6</p> <p>NOTE: Refer to the Common Core Technical Standards booklet if you wish to add more Career Pathways to meet the needs of your local Area.</p>	<p>KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.A • Standard CC.3.5.11-12.A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.B • Standard CC.3.5.11-12.B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p>CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author's purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p>	<p>TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C <p>-Produce clear and coherent writing ... appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p>	<p>MATH STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p>Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>MATH STANDARD AREA: ALGEBRAIC CONCEPTS Level "D" For High School: Algebra</p> <p>CC Standard 2.2.HS.D.1- Interpret the structure of expressions to represent a quantity in terms of its context.</p> <p>CC Standard 2.2.HS.D.2 - Write expressions in</p>
1402 Demonstrate the basic use of "G" and "M" codes.				
1403 Demonstrate the use of numerical controls.				
1404 Identify and demonstrate the use of Cartesian & Polar coordinate systems.				
1405 Demonstrate absolute & incremental positioning.				
1406 Demonstrate the "dry" or practice run of a CNC program before machining a part.				
1407 Identify and explain the advantages and disadvantages of CNC machining.				
1408 Calculate and apply machine feeds and speeds to CNC operations.				
1409 Set zero and tool offsets for a part to be machined.				

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<p>1410 Transfer data files to-and-from a CNC machine.</p> <p>1411 Identify and demonstrate the use of MDI applications.</p> <p>1412 Program and produce a part using linear and circular interpolation.</p>		<ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.G</u> Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart). • <u>Standard CC.3.5.9-10. H</u> Assess the reasoning in a text to support the author’s claim for solving a technical problem. • <u>Standard CC.3.5.9-10. I</u> Compare and contrast findings presented in a text to those from other sources, etc. <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.11-12. G</u> Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem. • <u>Standard CC.3.5.11-12. H</u> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. • <u>Standard CC.3.5.11-12. I</u> Synthesize info. from a range of sources into a coherent understanding . <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.J</u> <u>Standard CC.3.5.11-12.J</u> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently. 	<ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.E</u> • <u>Standard CC.3.6.11-12.E.</u> Use technology, including the Internet, to produce, publish, and update individual or shared writing products. <p>RESEARCH (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.6.9-10.F</u> • <u>Standard CC.3.6.11-12.F</u> Conduct short and more sustained research to answer a question or solve a problem. • <u>Standard CC.3.6.9-10.G.</u> • <u>Standard CC.3.6.11-12.G</u> Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. • <u>Standard CC.3.6.9-10.H.</u> • <u>Standard CC.3.6.11-12.H.</u> Draw evidence from informational texts to support analysis, reflection, and research. <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • <u>Standard CC.3.5.9-10.I</u> & • <u>Standard CC.3.5.11-</u> 	<p>equivalent forms to solve problems.</p> <p><u>CC Standard 2.2.HS.D.3</u> - Extend the knowledge of arithmetic operations and apply to polynomials.</p> <p><u>CC Standard HS.D.4</u> - Demonstrate the relationship between zeros and polynomials to make generalizations about functions and their graphs.</p> <p><u>CC Standard 2.2.HS.D.5</u> - Use polynomial identities to solve problems.</p> <p><u>CC Standard 2.2.HS.D.6</u> - Extend the knowledge of rational functions to rewrite in equivalent forms.</p> <p><u>CC Standard 2.2.HS.D.7</u> - Create and graph equations or inequalities to describe numbers or relationships.</p> <p><u>CC Standard 2.2.HS.D.8</u> - Apply inverse operations to solve equations or formulas for a given variable.</p> <p><u>CC Standard 2.2.HS.D.9</u> - Use reasoning to solve equations and justify the solution method.</p> <p><u>CC Standard 2.2.HS.D.10</u> - Represent, solve and interpret equations/inequalities and systems of equations and inequalities.</p>

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			<p><u>12.I.</u> Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>MATH STANDARD AREA: 2.2 ALGEBRAIC CONCEPTS Level "C" For High School: Functions</p> <p><u>CC Standard 2.2.HS.C.1</u> - Use the concept and notation of functions to interpret and apply them in terms of their context.</p> <p><u>CC Standard 2.2.HS.C.2</u> - Graph and analyze functions.</p> <p><u>CC Standard 2.2.HS.C.3</u> - Write functions or sequences that model relationships between two quantities.</p> <p><u>CC Standard 2.2.HS.C.4</u> - Interpret the effects transformations have on functions and find the inverses of functions.</p> <p><u>CC Standard 2.2.HS.C.5</u> - Construct and compare linear, quadratic and exponential models to solve problems.</p> <p><u>CC Standard 2.2.HS.C.6</u> - Interpret functions in terms of the situation they model.</p> <p><u>CC Standard 2.2.HS.C.7</u> - Apply radian measure of an angle and the unit circle to analyze the trigonometric functions.</p> <p><u>CC Standard 2.2.HS.C.8</u> - Choose trigonometric functions to model periodic phenomena and describe the properties of the graphs.</p> <p><u>CC Standard 2.2.HS.C.9</u> - Prove the Pythagorean</p>

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				<p>identity and use it to calculate trigonometric ratios.</p> <p>MATH CURRICULUM AREA: 2.3 - GEOMETRY Level "A" For High School: Geometry</p> <p><u>CC Standard 2.3.HS.A.1</u> - Use geometric figures and their properties to represent transformations in the plane.</p> <p><u>CC Standard 2.3.HS.A.2</u> - Apply rigid transformations to determine and explain congruence.</p> <p><u>CC Standard 2.3.HS.A.3</u> - Verify and apply geometric theorems as they relate to geometric figures.</p> <p><u>CC Standard 2.3.HS.A.4</u> - Apply the concept of congruence to create geometric constructions.</p> <p><u>CC Standard 2.3.HS.A.5</u> - Create justifications based on transformations to establish similarity of plane figures.</p> <p><u>CC Standard 2.3.HS.A.6</u> - Verify and apply theorems involving similarity as they relate to plane figures.</p> <p><u>CC Standard 2.3.HS.A.7</u> - Apply trigonometric ratios to solve problems involving right triangles.</p> <p><u>CC Standard 2.3.HS.A.8</u> - Apply geometric theorems to verify properties of circles.</p> <p><u>CC Standard 2.3.HS.A.9</u> - Extend the concept of</p>

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				<p>similarity to determine arc lengths and areas of sectors of circles.</p> <p><u>CC Standard 2.3.HS.A.10</u> - Translate between the geometric description and the equation for a conic section.</p> <p><u>CC Standard 2.3.HS.A.11</u> - Apply coordinate geometry to prove simple geometric theorems algebraically.</p> <p><u>CC Standard 2.3.HS.A.12</u> - Explain volume formulas and use them to solve problems.</p> <p><u>CC Standard 2.3.HS.A.13</u> - Analyze relationships between two-dimensional and three-dimensional objects.</p> <p><u>CC Standard 2.3.HS.A.14</u> - Apply geometric concepts to model and solve real world problems.</p>