



**Electrical, Electronic and Communications Engineering Technology/Technician, Classification of Instructional Program (CIP) 15.0303  
Units of Instruction and Task Grid Linked to Pennsylvania Core Standards**

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
<p><b>100 SAFETY.</b></p> <p>101 Describe OSHA safety regulations.</p> <p>102 Identify, select, and demonstrate proper hand tool use for electronics work.</p> <p>103 Recognize the types and usages of fire extinguishers.</p> <p>104 Interpret Safety Data Sheets (SDS).</p> <p>105 RESERVED</p> <p>106 Explain the chemical and environmental hazards for disposal of electronics equipment.</p> <p>107 Describe electrical shock and list the effects of electric current on the human body.</p>	<p><b>CAREER CLUSTER Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc.</p> <p><b>Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc.</p> <p><b>Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E</b></p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content.</p> <p><b>Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p><b>Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D</b> Develop and strengthen writing as needed by</p>	

		<p>Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  Analyze the author’s purpose in providing an explanation, describing a procedure...and  Analyze the structure of the relationships among concepts in a text.  <b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b></p>	<p>planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	
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			<b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J</b> <b>Standard CC.3.5.11-12.J</b> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	
<b>200 ELECTRICAL QUANTITIES AND COMPONENTS.</b>				
201 Describe electronic measurements and their applications. 202 Identify the fundamental SI units. 203 Apply proper scientific and engineering notation. 204 RESERVED 205 Identify resistor values by color code and numerical markings 206 Identify component symbols used in electronic schematic diagrams. 207 Identify schematic symbols for various types of electrical and electronic components. 208 Identify semiconductors and symbols and explain their usage.	<b>CAREER CLUSTER</b> <b>Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7  <b>CAREER PATHWAYS INCLUDE:</b> <b>Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6  <b>NOTE:</b> <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b>	<b>KEY IDEAS/DETAILS</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.  <b>CRAFT &amp; STRUCTURE</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> Analyze the author’s purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.  <b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>	<b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.	

		<p><b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>          Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>          Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>          Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>          Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>          Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>          Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>          By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>		
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<b>300 INSTRUMENTATION.</b>				
301 Utilize multi-meters, function generators, and frequency counters.	<b>CAREER CLUSTER</b> Manufacturing Career Cluster	<b>KEY IDEAS/DETAILS</b> <b>GRADES 9-10-11-12</b> Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A	<b>TEXT TYPES AND PURPOSE</b> <b>GRADES 9-10-11-12</b> Standard CC.3.6.9-10.A	<b>NUMBERS AND OPERATIONS</b> Standard 2.1.HS.F.2
302 RESERVED				
303 RESERVED				

<p>304 Use a power supply.</p>	<p>(Choose Standards) 1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b> <b>Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>NOTE:</b> <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p>Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). <b>Standard CC.3.5.9-10. H</b> Assess the reasoning in a text to support the author’s claim for solving a technical problem. <b>Standard CC.3.5.9-10. I</b></p>	<p><b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10 D</b> <b>Standard CC.3.6.11-12.D</b> 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. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> Conduct short and more sustained research to answer a question or solve a problem. <b>Standard CC.3.6.9-10.G.</b> <b>Standard CC.3.6.11-12.G</b></p>	<p>Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>
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		<p>Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	
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<b>400</b>	<b>OHM'S/WATT'S LAW.</b>				
401	Apply the concept of Ohm's law to determine current, voltage, or resistance.	<b>CAREER CLUSTER</b> <b>Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7  <b>CAREER PATHWAYS INCLUDE:</b> <b>Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6	<b>KEY IDEAS/DETAILS</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.  <b>CRAFT &amp; STRUCTURE</b>	<b>TEXT TYPES AND PURPOSE</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.	<b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b>
402	Identify the relationship between voltage, current, resistance, and power in DC using the 12 basic common formulas derived from Ohm's and Watt's Law Pie Chart.				
403	RESERVED				
404	RESERVED				
405	RESERVED				

	<p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b></p>	<p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support</p>	<p>Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b></p>
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<b>500 SERIES CIRCUITS.</b>				
<p>501 Apply Kirchoff's Voltage Law in a series circuit.  502 RESERVED  503 RESERVED  504 Solve for equivalent resistance in a series circuit.  505 Analyze power consumption, dissipation, and energy units in a series circuit.  506 Analyze the Effects of open circuits and short circuits in series circuits.</p>	<p><b>CAREER CLUSTER  Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS  INCLUDE:  Maintenance,  Installation and Repair  Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:  Refer to the Common  Career Technical Core  Standards Booklet if you  wish to add more  Pathways to meet the  needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS  GRADES 9-10-11-12  Standard CC.3.5.9-10. A  Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B  Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C  Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE  GRADES 9-10-11-12  Standard CC.3.5.9-10. D  Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E  Standard CC.3.5.11-12.E</b></p>	<p><b>TEXT TYPES AND  PURPOSE  GRADES 9-10-11-12  Standard CC.3.6.9-10.A  Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B  Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp;  DISTRIBUTION OF  WRITING  GRADES 9-10-11-12  Standard CC.3.6.9-10.C  Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D  Standard CC.3.6.11-12.D</b></p>	<p><b>NUMBERS AND  OPERATIONS  Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC  CONCEPTS</b></p>

		<p>Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p>	<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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p><b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b> Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations/inequalities. and systems of equations/inequalities.</p>
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		<b>RANGE OF READING</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J</b> <b>Standard CC.3.5.11-12.J</b> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.		
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<b>600 PARALLEL CIRCUITS.</b> 601 Solve for equivalent resistance in a parallel circuit. 602 Explain voltage in a parallel circuit. 603 Apply Kirchoff's Current Law in a parallel circuit. 604 RESERVED 605 Analyze power consumption, dissipation, and energy units in a parallel circuit. 606 Analyze the Effects of open circuit and short circuit conditions in parallel circuits.	<b>CAREER CLUSTER</b> <b>Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7  <b>CAREER PATHWAYS INCLUDE:</b> <b>Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6  <b>NOTE:</b> <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b>	<b>KEY IDEAS/DETAILS</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.  <b>CRAFT &amp; STRUCTURE</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> Analyze the author's purpose in providing an explanation, describing a procedure...and	<b>TEXT TYPES AND PURPOSE</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.  <b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10 D</b> <b>Standard CC.3.6.11-12.D</b> 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. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b>	<b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.  <b>ALGEBRAIC CONCEPTS</b> <b>Standard 2.2.HS.D.1</b> Interpret the structure of expressions to represent a quantity in terms of its context. <b>Standard 2.2.HS.D.2</b> Write expressions in
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		<p>Analyze the structure of the relationships among concepts in a text.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<p><b>700 SERIES-PARALLEL CIRCUITS.</b></p>				
<p>701 Solve for equivalent resistance in a Series-Parallel combination circuit.</p> <p>702 Apply Kirchoff's current and voltage law to a Series-Parallel Circuit.</p> <p>703 Analyze and troubleshoot DC combination/complex circuits.</p>	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. A</b>  <b>Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b></p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.A</b>  <b>Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b></p>	<p><b>NUMBERS AND OPERATIONS</b>  <b>Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship</p>

		<p>Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).</p> <p><b>Standard CC.3.5.9-10. H</b> Assess the reasoning in a text to support the author’s claim for solving a technical problem.</p> <p><b>Standard CC.3.5.9-10. I</b> Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 11-12</b> <b>Standard CC.3.5.11-12. G</b> Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.</p> <p><b>Standard CC.3.5.11-12. H</b> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <p><b>Standard CC.3.5.11-12. I</b> Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J</b> <b>Standard CC.3.5.11-12.J</b> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p><b>Standard CC.3.6.11-12.F</b> Conduct short and more sustained research to answer a question or solve a problem.</p> <p><b>Standard CC.3.6.9-10.G.</b> <b>Standard CC.3.6.11-12.G</b> Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <p><b>Standard CC.3.6.9-10.H.</b> <b>Standard CC.3.6.11-12.H.</b> Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b> Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>between zeros and factors of polynomials.</p> <p><b>Standard 2.2.HS.D.5</b> Use polynomial identities to solve problems.</p> <p><b>Standard 2.2.HS.D.6</b> Extend the knowledge of rational functions to rewrite in equivalent forms.</p> <p><b>Standard 2.2.HS.D.7</b> Create and graph equations or inequalities to describe numbers or relationships.</p> <p><b>Standard 2.2.HS.D.8</b> Apply inverse operations to solve equations or formulas for a given variable.</p> <p><b>Standard 2.2.HS.D.9</b> Use reasoning to solve equations and justify the solution method.</p> <p><b>Standard 2.2.HS.D.10</b> Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>800</b>	<b>RESERVED.</b>			
801	RESERVED	<p><b>CAREER CLUSTER Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b></p>	<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to</p>
802	RESERVED			
803	RESERVED			
804	RESERVED			
805	RESERVED			
806	RESERVED			

	<p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p>	<p>solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.</p>
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		<p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>		<p><b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>900 ALTERNATING CURRENT.</b>				
901 Calculate the period and frequency of the waveform. 902 Determine the peak-to-peak, average, and RMS values of a sine-wave. 903 Explain various waveforms.	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b></p>	<p><b>KEY IDEAS/DETAILS</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. A</b>  <b>Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b></p>	<p><b>TEXT TYPES AND PURPOSE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.A</b>  <b>Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b></p>	<p><b>NUMBERS AND OPERATIONS</b>  <b>Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on</p>

	<p><b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc.</p> <p><b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). <b>Standard CC.3.5.9-10. H</b> Assess the reasoning in a text to support the author’s claim for solving a technical problem. <b>Standard CC.3.5.9-10. I</b> Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 11-12</b> <b>Standard CC.3.5.11-12. G</b> Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. <b>Standard CC.3.5.11-12. H</b> Evaluate the hypotheses, data, analysis, and conclusions in a</p>	<p><b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10 D</b> <b>Standard CC.3.6.11-12.D</b> 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. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> Conduct short and more sustained research to answer a question or solve a problem. <b>Standard CC.3.6.9-10.G.</b> <b>Standard CC.3.6.11-12.G</b> Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. <b>Standard CC.3.6.9-10.H.</b> <b>Standard CC.3.6.11-12.H.</b> Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b></p>	<p>measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b> <b>Standard 2.2.HS.D.1</b> Interpret the structure of expressions to represent a quantity in terms of its context. <b>Standard 2.2.HS.D.2</b> Write expressions in equivalent forms to solve problems. <b>Standard 2.2.HS.D.3</b> Extend the knowledge of arithmetic operations and apply to polynomials. <b>Standard 2.2.HS.D.4</b> Understand the relationship between zeros and factors of polynomials. <b>Standard 2.2.HS.D.5</b> Use polynomial identities to solve problems. <b>Standard 2.2.HS.D.6</b> Extend the knowledge of rational functions to rewrite in equivalent forms. <b>Standard 2.2.HS.D.7</b> Create and graph equations or inequalities to describe numbers or relationships. <b>Standard 2.2.HS.D.8</b> Apply inverse operations to solve equations or formulas for a given variable. <b>Standard 2.2.HS.D.9</b> Use reasoning to solve equations and justify the solution method.</p>
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		<p>technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING  GRADES 9-10-11-12  Standard CC.3.5.9-10.J  Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p><b>GRADES 9-10-11-12  Standard CC.3.5.9-10.I &amp;  Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p><b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>1000 OSCILLOSCOPE.</b>				
<p>1001 Describe the basic sections of an oscilloscope.  1002 Measure voltage using an oscilloscope.  1003 Measure frequency using an oscilloscope.  1004 Measure phase relationships using an oscilloscope.</p>	<p><b>CAREER CLUSTER  Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS  INCLUDE:  Maintenance,  Installation and Repair  Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:  Refer to the Common  Career Technical Core  Standards Booklet if you  wish to add more  Pathways to meet the  needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS  GRADES 9-10-11-12  Standard CC.3.5.9-10. A  Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.</p> <p><b>Standard CC.3.5.9-10 B  Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.</p> <p><b>Standard CC.3.5.9-10.C  Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE  GRADES 9-10-11-12  Standard CC.3.5.9-10. D  Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E  Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.</p> <p><b>Standard CC.3.5.9-10.F  Standard CC.3.5.11-12.F</b></p>	<p><b>TEXT TYPES AND  PURPOSE  GRADES 9-10-11-12  Standard CC.3.6.9-10.A  Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.</p> <p><b>Standard CC.3.6.9-10.B  Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp;  DISTRIBUTION OF  WRITING  GRADES 9-10-11-12  Standard CC.3.6.9-10.C  Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p><b>Standard CC.3.6.9-10 D  Standard CC.3.6.11-12.D</b>  Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on</p>	<p><b>NUMBERS AND  OPERATIONS  Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p><b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p><b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p><b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC  CONCEPTS  Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a</p>

		<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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b></p>	<p>addressing what is most significant for a specific purpose and audience.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b> Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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		By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.		
<b>1100 INDUCTANCE.</b>				
<p>1101 Measure and calculate the effect of a series resistive-inductive (RL) circuit on DC voltage and current.</p> <p>1102 Measure and calculate the effect of a series resistive-inductive (RL) circuit on AC voltage and current.</p> <p>1103 Calculate the total inductance of inductors connected in series or parallel.</p>	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. A</b>  <b>Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b></p>	<p><b>TEXT TYPES AND PURPOSE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.A</b>  <b>Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p>	<p><b>NUMBERS AND OPERATIONS</b>  <b>Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.</p>

		<p>Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p><b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>1200 INDUCTIVE REACTANCE.</b>				
1201 Measure and calculate the effect of inductive reactance on current. 1202 Measure and calculate the effect of change in frequency on current. 1203 Identify the phase (lead-lag) relationship between current and applied voltage in a series RL circuit.	<b>CAREER CLUSTER</b> <b>Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7	<b>KEY IDEAS/DETAILS</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b>		<b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to

<p>1204 Calculate the total inductive reactance in series and parallel circuits.</p>	<p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p>	<p>solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.</p>
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		<p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>		<p><b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>1300 RESISTOR INDUCTOR (RL) CIRCUITS IN ALTERNATING CURRENT (AC).</b>				
<p>1301 Use vectors to describe magnitude and direction of voltages.</p> <p>1302 Use vectors in determining total current or voltage in series and parallel RL circuits.</p>	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b></p>	<p><b>KEY IDEAS/DETAILS</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. A</b>  <b>Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b></p>	<p><b>TEXT TYPES AND PURPOSE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.A</b>  <b>Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b></p>	<p><b>NUMBERS AND OPERATIONS</b>  <b>Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on</p>

	<p><b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc.</p> <p><b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 9-10</b></p> <p><b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).</p> <p><b>Standard CC.3.5.9-10. H</b> Assess the reasoning in a text to support the author’s claim for solving a technical problem.</p> <p><b>Standard CC.3.5.9-10. I</b> Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 11-12</b></p> <p><b>Standard CC.3.5.11-12. G</b> Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.</p> <p><b>Standard CC.3.5.11-12. H</b> Evaluate the hypotheses, data, analysis, and conclusions in a</p>	<p><b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p><b>Standard CC.3.6.9-10 D</b> <b>Standard CC.3.6.11-12.D</b> 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><b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b> <b>GRADES 9-10-11-12</b></p> <p><b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> Conduct short and more sustained research to answer a question or solve a problem.</p> <p><b>Standard CC.3.6.9-10.G.</b> <b>Standard CC.3.6.11-12.G</b> Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p> <p><b>Standard CC.3.6.9-10.H.</b> <b>Standard CC.3.6.11-12.H.</b> Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b> <b>GRADES 9-10-11-12</b></p>	<p>measurement when reporting quantities.</p> <p><b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b></p> <p><b>Standard 2.2.HS.D.1</b> Interpret the structure of expressions to represent a quantity in terms of its context.</p> <p><b>Standard 2.2.HS.D.2</b> Write expressions in equivalent forms to solve problems.</p> <p><b>Standard 2.2.HS.D.3</b> Extend the knowledge of arithmetic operations and apply to polynomials.</p> <p><b>Standard 2.2.HS.D.4</b> Understand the relationship between zeros and factors of polynomials.</p> <p><b>Standard 2.2.HS.D.5</b> Use polynomial identities to solve problems.</p> <p><b>Standard 2.2.HS.D.6</b> Extend the knowledge of rational functions to rewrite in equivalent forms.</p> <p><b>Standard 2.2.HS.D.7</b> Create and graph equations or inequalities to describe numbers or relationships.</p> <p><b>Standard 2.2.HS.D.8</b> Apply inverse operations to solve equations or formulas for a given variable.</p> <p><b>Standard 2.2.HS.D.9</b></p>
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		<p>technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING  GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p><b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>1400 TRANSFORMERS.</b>				
<p>1401 Identify transformer windings, types, and usages.  1402 Calculate and measure voltage-turns ratio.  1403 Measure the effect of secondary load on primary current.  1404 Troubleshoot transformers for open and short circuit conditions.</p>	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS  GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. A</b>  <b>Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE  GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b></p>	<p><b>TEXT TYPES AND PURPOSE  GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.A</b>  <b>Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING  GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new</p>	<p><b>NUMBERS AND OPERATIONS</b>  <b>Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b></p>

		<p><b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). <b>Standard CC.3.5.9-10. H</b> Assess the reasoning in a text to support the author’s claim for solving a technical problem. <b>Standard CC.3.5.9-10. I</b> Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 11-12</b> <b>Standard CC.3.5.11-12. G</b> Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. <b>Standard CC.3.5.11-12. H</b> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. <b>Standard CC.3.5.11-12. I</b> Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J</b> <b>Standard CC.3.5.11-12.J</b></p>	<p>approach, focusing on addressing what is most significant for a specific purpose and audience. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> Conduct short and more sustained research to answer a question or solve a problem. <b>Standard CC.3.6.9-10.G.</b> <b>Standard CC.3.6.11-12.G</b> Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. <b>Standard CC.3.6.9-10.H.</b> <b>Standard CC.3.6.11-12.H.</b> Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b> Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>Interpret the structure of expressions to represent a quantity in terms of its context. <b>Standard 2.2.HS.D.2</b> Write expressions in equivalent forms to solve problems. <b>Standard 2.2.HS.D.3</b> Extend the knowledge of arithmetic operations and apply to polynomials. <b>Standard 2.2.HS.D.4</b> Understand the relationship between zeros and factors of polynomials. <b>Standard 2.2.HS.D.5</b> Use polynomial identities to solve problems. <b>Standard 2.2.HS.D.6</b> Extend the knowledge of rational functions to rewrite in equivalent forms. <b>Standard 2.2.HS.D.7</b> Create and graph equations or inequalities to describe numbers or relationships. <b>Standard 2.2.HS.D.8</b> Apply inverse operations to solve equations or formulas for a given variable. <b>Standard 2.2.HS.D.9</b> Use reasoning to solve equations and justify the solution method. <b>Standard 2.2.HS.D.10</b> Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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		By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.		
<b>1500 CAPACITANCE.</b>				
<p>1501 Identify the effect of capacitance in AC and DC circuits.</p> <p>1502 Solve for equivalent capacitance in series and parallel circuits.</p> <p>1503 Calculate and measure RC time constants.</p>	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. A</b>  <b>Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b></p>	<p><b>TEXT TYPES AND PURPOSE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.A</b>  <b>Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p>	<p><b>NUMBERS AND OPERATIONS</b>  <b>Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.</p>

		<p>Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p><b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>1600 CAPACITIVE REACTANCE.</b>				
1601 Measure and calculate the effect of capacitive reactance on current. 1602 Measure and calculate the effect of change in frequency on circuit current.	<b>CAREER CLUSTER</b> <b>Manufacturing Career Cluster</b> (Choose Standards)	<b>KEY IDEAS/DETAILS</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc.	<b>TEXT TYPES AND PURPOSE</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b>	<b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to

<p>1603 Identify phase (lead-lag) relationship between current and applied voltage in a series RC circuit.</p> <p>1604 Calculate the total capacitive reactance in series and parallel circuits.</p>	<p>1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>          (Choose Standards)          1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>          Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>          Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>          Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>          Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>          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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>          Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>          Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b></p>	<p>Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>          Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>          Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>          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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>          Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>          Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b></p>	<p>solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>          Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>          Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>          Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>          Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>          Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>          Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>          Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>          Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>          Extend the knowledge of rational functions to rewrite in equivalent forms.</p>
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		<p>Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 11-12</b> <b>Standard CC.3.5.11-12. G</b> Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. <b>Standard CC.3.5.11-12. H</b> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. <b>Standard CC.3.5.11-12. I</b> Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J</b> <b>Standard CC.3.5.11-12.J</b> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. <b>Standard CC.3.6.9-10.H.</b> <b>Standard CC.3.6.11-12.H.</b> Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b> Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p><b>Standard 2.2.HS.D.7</b> Create and graph equations or inequalities to describe numbers or relationships. <b>Standard 2.2.HS.D.8</b> Apply inverse operations to solve equations or formulas for a given variable. <b>Standard 2.2.HS.D.9</b> Use reasoning to solve equations and justify the solution method. <b>Standard 2.2.HS.D.10</b> Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>1700 RESISTANCE CAPACITANCE (RC) CIRCUITS.</b>				
<p>1701 Describe magnitude and direction of voltages using vectors.</p> <p>1702 Determining total current or voltage in series and parallel RC circuits using vectors.</p> <p>1703 RESERVED</p>	<p><b>CAREER CLUSTER Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p>	<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b></p>

	<p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>CRAFT &amp; STRUCTURE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.</p>	<p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support</p>	<p>Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b></p>
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		<p><b>Standard CC.3.5.11-12. H</b> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <p><b>Standard CC.3.5.11-12. I</b> Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J</b> <b>Standard CC.3.5.11-12.J</b> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>analysis, reflection, and research.</p> <p><b>RANGE OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b> Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>Use reasoning to solve equations and justify the solution method.</p> <p><b>Standard 2.2.HS.D.10</b> Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<p><b>1800 RESISTANCE INDUCTANCE CAPACITANCE (RLC) CIRCUITS.</b></p> <p>1801 Calculate total current in series RLC circuits. 1802 Calculate total current in parallel RLC circuits. 1803 RESERVED 1804 RESERVED</p>	<p><b>CAREER CLUSTER</b> <b>Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b> <b>Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>NOTE:</b> <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b></p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10 D</b> <b>Standard CC.3.6.11-12.D</b></p>	<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b></p>
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		<p>Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.  <b>RANGE OF READING</b></p>	<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><b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp;</b>  <b>Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a</p>	<p><b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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		<b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J</b> <b>Standard CC.3.5.11-12.J</b> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.	range of tasks, purposes and audiences...etc.	
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<b>1900 RESONANCE.</b>  1901 Calculate and measure the resonant frequency of a series RLC circuit. 1902 RESERVED 1903 Calculate the "Q" of a series resonant circuit. 1904 Calculate and measure the resonant frequency of a parallel RLC circuit. 1905 RESERVED	<b>CAREER CLUSTER</b> <b>Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7  <b>CAREER PATHWAYS INCLUDE:</b> <b>Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6  <b>NOTE:</b> <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b>	<b>KEY IDEAS/DETAILS</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.  <b>CRAFT &amp; STRUCTURE</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> Analyze the author’s purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.	<b>TEXT TYPES AND PURPOSE</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.  <b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10 D</b> <b>Standard CC.3.6.11-12.D</b> 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. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce,	<b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.  <b>ALGEBRAIC CONCEPTS</b> <b>Standard 2.2.HS.D.1</b> Interpret the structure of expressions to represent a quantity in terms of its context. <b>Standard 2.2.HS.D.2</b> Write expressions in equivalent forms to solve problems.
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		<p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p><b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b> Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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2000 SOLDERING – DESOLDERING.				
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<p>2001 Demonstrate types and usage of soldering/desoldering equipment.</p> <p>2002 Desolder components from the circuit board.</p> <p>2003 Solder components to the circuit board.</p> <p>2004 Properly and safely demonstrate soldering and de-soldering methods.</p>	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. A</b>  <b>Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b></p>	<p><b>TEXT TYPES AND PURPOSE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.A</b>  <b>Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer</p>	
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		<p>Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	
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<b>2100 DIODES.</b>				
2101 Test diodes and identify the cathode and anode. 2102 Analyze the voltage-current relationship of diodes by plotting the characteristic curve. 2103 Distinguish the correct bias for the operation of a LED. 2104 Compare the forward and reverse characteristics of a Zener diode.	<b>CAREER CLUSTER</b> <b>Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7  <b>CAREER PATHWAYS INCLUDE:</b>	<b>KEY IDEAS/DETAILS</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b>	<b>TEXT TYPES AND PURPOSE</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b>	<b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b>

<p><b>Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>NOTE:</b> <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). <b>Standard CC.3.5.9-10. H</b> Assess the reasoning in a text to support the author’s claim for solving a technical problem. <b>Standard CC.3.5.9-10. I</b> Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 11-12</b></p>	<p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10 D</b> <b>Standard CC.3.6.11-12.D</b> 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. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> Conduct short and more sustained research to answer a question or solve a problem. <b>Standard CC.3.6.9-10.G.</b> <b>Standard CC.3.6.11-12.G</b> Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.</p>	<p>Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b> <b>Standard 2.2.HS.D.1</b> Interpret the structure of expressions to represent a quantity in terms of its context. <b>Standard 2.2.HS.D.2</b> Write expressions in equivalent forms to solve problems. <b>Standard 2.2.HS.D.3</b> Extend the knowledge of arithmetic operations and apply to polynomials. <b>Standard 2.2.HS.D.4</b> Understand the relationship between zeros and factors of polynomials. <b>Standard 2.2.HS.D.5</b> Use polynomial identities to solve problems. <b>Standard 2.2.HS.D.6</b> Extend the knowledge of rational functions to rewrite in equivalent forms. <b>Standard 2.2.HS.D.7</b> Create and graph equations or inequalities to describe numbers or relationships.</p>
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		<p><b>Standard CC.3.5.11-12. G</b> Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.</p> <p><b>Standard CC.3.5.11-12. H</b> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <p><b>Standard CC.3.5.11-12. I</b> Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J</b> <b>Standard CC.3.5.11-12.J</b> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p><b>Standard CC.3.6.9-10.H.</b> <b>Standard CC.3.6.11-12.H.</b> Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b> Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p><b>Standard 2.2.HS.D.8</b> Apply inverse operations to solve equations or formulas for a given variable.</p> <p><b>Standard 2.2.HS.D.9</b> Use reasoning to solve equations and justify the solution method.</p> <p><b>Standard 2.2.HS.D.10</b> Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>2200 POWER SUPPLIES.</b>				
<p>2201 Identify common rectifier circuits (half-wave and full-wave).</p> <p>2202 Construct and analyze the operation of a rectifier circuit.</p> <p>2203 Investigate the cause and effect of power supply filtering, hum, and common filter types.</p> <p>2204 RESERVED</p> <p>2205 Measure and calculate power supply ripple percentage and voltage regulation.</p> <p>2206 RESERVED</p> <p>2207 RESERVED</p> <p>2208 Measure and identify the regulation properties of a shunt type Zener regulator.</p>	<p><b>CAREER CLUSTER</b> <b>Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b> <b>Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>NOTE:</b> <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more</b></p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc.</p> <p><b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc.</p> <p><b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b></p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content.</p> <p><b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12 C</b></p>	<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p><b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p><b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p><b>Standard 2.1.HS.F.6</b></p>

	<p><b>Pathways to meet the needs of your local Area.</b></p>	<p>Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  Analyze the author’s purpose in providing an explanation, describing a procedure...and  Analyze the structure of the relationships among concepts in a text.  <b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.    <b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b></p>	<p>Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.    <b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.    <b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp;</b>  <b>Standard CC.3.5.11-12.I.</b></p>	<p>Extend the knowledge of arithmetic operations and apply to complex numbers.    <b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and</p>
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		<p>Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J</b> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>inequalities and systems of equations/inequalities.</p>
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<b>2300 TRANSISTOR CHARACTERISTICS.</b>				
<p>2301 Identify base, emitter, and collector terminals of PNP and NPN transistors.</p> <p>2302 Locate the ratings, characteristics and operating parameters listed on a typical transistor specification sheet.</p> <p>2303 Determine the type of transistor, NPN or PNP, and operating condition.</p> <p>2304 Identify schematic symbols and uses for various types of transistors.</p> <p>2305 Compare FET and BJT devices.</p>	<p><b>CAREER CLUSTER Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A Standard CC.3.5.11-12. A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F</b> Analyze the author's purpose in providing an explanation, describing a procedure...and</p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D</b> 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><b>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

		<p>Analyze the structure of the relationships among concepts in a text.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p><b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.  <b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	
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<p><b>2400 SMALL SIGNAL AMPLIFIERS.</b></p>				
<p>2401 Use biasing polarity of NPN or PNP transistors.  2402 Calculate gain.  2403 Distinguish between basic amplifier configurations.  2404 RESERVED  2405 RESERVED</p>	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. A</b>  <b>Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b></p>	<p><b>TEXT TYPES AND PURPOSE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.A</b>  <b>Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b></p>	<p><b>NUMBERS AND OPERATIONS</b>  <b>Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.</p>

		<p>Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p><b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>2500 OPERATIONAL AMPLIFIERS.</b>				
2501 Construct and analyze the phase shift between input and output of an inverting IC Op-Amp. 2502 Construct and analyze the phase shift between input and output of a non-inverting IC Op-Amp.	<b>CAREER CLUSTER</b> <b>Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7  <b>CAREER PATHWAYS INCLUDE:</b>	<b>KEY IDEAS/DETAILS</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b>	<b>TEXT TYPES AND PURPOSE</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including	<b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to

<p><b>Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>NOTE:</b> <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p>Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). <b>Standard CC.3.5.9-10. H</b> Assess the reasoning in a text to support the author’s claim for solving a technical problem. <b>Standard CC.3.5.9-10. I</b> Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 11-12</b> <b>Standard CC.3.5.11-12. G</b></p>	<p>the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10 D</b> <b>Standard CC.3.6.11-12.D</b> 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. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> Conduct short and more sustained research to answer a question or solve a problem. <b>Standard CC.3.6.9-10.G.</b> <b>Standard CC.3.6.11-12.G</b> Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. <b>Standard CC.3.6.9-10.H.</b> <b>Standard CC.3.6.11-12.H.</b></p>	<p>guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b> <b>Standard 2.2.HS.D.1</b> Interpret the structure of expressions to represent a quantity in terms of its context. <b>Standard 2.2.HS.D.2</b> Write expressions in equivalent forms to solve problems. <b>Standard 2.2.HS.D.3</b> Extend the knowledge of arithmetic operations and apply to polynomials. <b>Standard 2.2.HS.D.4</b> Understand the relationship between zeros and factors of polynomials. <b>Standard 2.2.HS.D.5</b> Use polynomial identities to solve problems. <b>Standard 2.2.HS.D.6</b> Extend the knowledge of rational functions to rewrite in equivalent forms. <b>Standard 2.2.HS.D.7</b> Create and graph equations or inequalities to describe numbers or relationships. <b>Standard 2.2.HS.D.8</b> Apply inverse operations to</p>
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		<p>Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING  GRADES 9-10-11-12  Standard CC.3.5.9-10.J  Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING  GRADES 9-10-11-12  Standard CC.3.5.9-10.I &amp;  Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>2600 BASIC DIGITAL ELECTRONICS.</b>				
<p>2601 Convert between numbering systems (decimal, binary, octal, and hexadecimal).</p> <p>2602 RESERVED</p> <p>2603 Identify the operation and develop the truth tables for the seven basic logic gates.</p> <p>2604 Connect combinational logic (multiplexer, demultiplexer, half-adder, full-adder).</p> <p>2605 Apply Boolean reduction and construct Karnaugh mapping for complex logic circuits.</p>	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more</b></p>	<p><b>KEY IDEAS/DETAILS  GRADES 9-10-11-12  Standard CC.3.5.9-10. A  Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B  Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C  Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE  GRADES 9-10-11-12  Standard CC.3.5.9-10. D  Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.</p>	<p><b>TEXT TYPES AND PURPOSE  GRADES 9-10-11-12  Standard CC.3.6.9-10.A  Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B  Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING  GRADES 9-10-11-12  Standard CC.3.6.9-10.C  Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.</p>	<p><b>NUMBERS AND OPERATIONS  Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

	<p><b>Pathways to meet the needs of your local Area.</b></p>	<p><b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author's claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b></p>	<p><b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp;</b>  <b>Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a</p>	<p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.  <b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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		<p>Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J</b> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	range of tasks, purposes and audiences...etc.	
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<b>2700 RESERVED.</b>				
<p>2701 RESERVED 2702 RESERVED</p>	<p><b>CAREER CLUSTER Manufacturing Career Cluster</b> (Choose Standards) 1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE: Maintenance, Installation and Repair Career Pathway</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B</b> Cite specific textual evidence, etc. Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F</b></p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D</b> Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most</p>	<p><b>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

		<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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). <b>Standard CC.3.5.9-10. H</b> Assess the reasoning in a text to support the author’s claim for solving a technical problem. <b>Standard CC.3.5.9-10. I</b> Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 11-12</b> <b>Standard CC.3.5.11-12. G</b> Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. <b>Standard CC.3.5.11-12. H</b> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. <b>Standard CC.3.5.11-12. I</b> Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J</b> <b>Standard CC.3.5.11-12.J</b></p>	<p>significant for a specific purpose and audience. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> Conduct short and more sustained research to answer a question or solve a problem. <b>Standard CC.3.6.9-10.G.</b> <b>Standard CC.3.6.11-12.G</b> Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. <b>Standard CC.3.6.9-10.H.</b> <b>Standard CC.3.6.11-12.H.</b> Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b> Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	
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		By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.		
<b>2800 TROUBLESHOOTING.</b>				
2801 Utilize the order of the troubleshooting process to detect failures in electrical and electronic circuits. 2802 Analyze and troubleshoot failures in electrical and electronic circuits.	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. A</b>  <b>Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b></p>	<p><b>TEXT TYPES AND PURPOSE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.A</b>  <b>Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p>	<p><b>NUMBERS AND OPERATIONS</b>  <b>Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b>  Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p><b>ALGEBRAIC CONCEPTS</b>  <b>Standard 2.2.HS.D.1</b>  Interpret the structure of expressions to represent a quantity in terms of its context.  <b>Standard 2.2.HS.D.2</b>  Write expressions in equivalent forms to solve problems.  <b>Standard 2.2.HS.D.3</b>  Extend the knowledge of arithmetic operations and apply to polynomials.</p>

		<p>Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p><b>Standard 2.2.HS.D.4</b>  Understand the relationship between zeros and factors of polynomials.  <b>Standard 2.2.HS.D.5</b>  Use polynomial identities to solve problems.  <b>Standard 2.2.HS.D.6</b>  Extend the knowledge of rational functions to rewrite in equivalent forms.  <b>Standard 2.2.HS.D.7</b>  Create and graph equations or inequalities to describe numbers or relationships.  <b>Standard 2.2.HS.D.8</b>  Apply inverse operations to solve equations or formulas for a given variable.  <b>Standard 2.2.HS.D.9</b>  Use reasoning to solve equations and justify the solution method.  <b>Standard 2.2.HS.D.10</b>  Represent, solve and interpret equations and inequalities and systems of equations/inequalities.</p>
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<b>2900 ELECTRONIC COMMUNICATIONS.</b>				
2901 Identify and explain the major components of a basic communication system. 2902 RESERVED	<b>CAREER CLUSTER</b> Manufacturing Career Cluster (Choose Standards)	<b>KEY IDEAS/DETAILS</b> <b>GRADES 9-10-11-12</b> Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc.	<b>TEXT TYPES AND PURPOSE</b> <b>GRADES 9-10-11-12</b> Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A	

	<p>1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b></p>	<p>Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b></p>	
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		<p>Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b>  <b>Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	
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<b>3000 MOTORS.</b>				
<p>3001 Describe the characteristics of AC and DC motors.</p> <p>3002 Describe characteristics of induction and Stepper motors.</p> <p>3003 Explain the difference between brushed and brushless motors.</p> <p>3004 Explain the use and function of a servomechanism to control the performance of a device.</p> <p>3005 Identify pulse-width modulation, motor controllers, and speed controllers.</p>	<p><b>CAREER CLUSTER</b>  <b>Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:</b>  <b>Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p>	<p><b>KEY IDEAS/DETAILS</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. A</b>  <b>Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.  <b>Standard CC.3.5.9-10 B</b>  <b>Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.  <b>Standard CC.3.5.9-10.C</b>  <b>Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE</b></p>	<p><b>TEXT TYPES AND PURPOSE</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.A</b>  <b>Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.  <b>Standard CC.3.6.9-10.B</b>  <b>Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p>	<p><b>NUMBERS AND OPERATIONS</b>  <b>Standard 2.1.HS.F.2</b>  Apply properties of rational and irrational numbers to solve real world or mathematical problems.  <b>Standard 2.1.HS.F.4</b>  Use units as a way to understand problems and to guide the solution of multistep problems.  <b>Standard 2.1.HS.F.5</b></p>

	<p><b>NOTE:</b>  <b>Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10. D</b>  <b>Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.  <b>Standard CC.3.5.9-10.E</b>  <b>Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.  <b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b></p>	<p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.C</b>  <b>Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.  <b>Standard CC.3.6.9-10 D</b>  <b>Standard CC.3.6.11-12.D</b>  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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support</p>	<p>Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  <b>Standard 2.1.HS.F.6</b>  Extend the knowledge of arithmetic operations and apply to complex numbers.</p>
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		<p>Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING  GRADES 9-10-11-12  Standard CC.3.5.9-10.J  Standard CC.3.5.11-12.J</b>  By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>analysis, reflection, and research.</p> <p><b>RANGE OF WRITING  GRADES 9-10-11-12  Standard CC.3.5.9-10.I &amp;  Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	
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<b>3100 HISTORY OF ELECTRONICS – PAST, PRESENT, AND FUTURE.</b>				
3101 Examine the cause and effect of past, present, and future technologies. 3102 RESERVED 3103 RESERVED	<p><b>CAREER CLUSTER  Manufacturing Career Cluster</b>  (Choose Standards)  1-2-3-4-5-6-7</p> <p><b>CAREER PATHWAYS INCLUDE:  Maintenance, Installation and Repair Career Pathway</b>  (Choose Standards)  1-2-3-4-5-6</p> <p><b>NOTE:  Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways to meet the needs of your local Area.</b></p>	<p><b>KEY IDEAS/DETAILS  GRADES 9-10-11-12  Standard CC.3.5.9-10. A  Standard CC.3.5.11-12 A</b>  Cite specific textual evidence, etc.</p> <p><b>Standard CC.3.5.9-10 B  Standard CC.3.5.11-12. B</b>  Determine the central ideas or conclusions of a text; etc.</p> <p><b>Standard CC.3.5.9-10.C  Standard CC.3.5.11-12.C</b>  Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE  GRADES 9-10-11-12  Standard CC.3.5.9-10. D  Standard CC.3.5.11-12.D</b>  Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E  Standard CC.3.5.11-12.E</b>  Analyze the structure of the relationships among concepts in a text, etc.</p>	<p><b>TEXT TYPES AND PURPOSE  GRADES 9-10-11-12  Standard CC.3.6.9-10.A  Standard CC.3.6.11-12.A</b>  Write arguments focused on discipline specific content.</p> <p><b>Standard CC.3.6.9-10.B  Standard CC.3.6.11-12.B</b>  Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING  GRADES 9-10-11-12  Standard CC.3.6.9-10.C  Standard CC.3.6.11-12 C</b>  Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p><b>Standard CC.3.6.9-10 D  Standard CC.3.6.11-12.D</b></p>	

		<p><b>Standard CC.3.5.9-10.F</b>  <b>Standard CC.3.5.11-12.F</b>  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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 9-10</b>  <b>Standard CC.3.5.9-10.G</b>  Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  <b>Standard CC.3.5.9-10. H</b>  Assess the reasoning in a text to support the author’s claim for solving a technical problem.  <b>Standard CC.3.5.9-10. I</b>  Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b>  <b>GRADES 11-12</b>  <b>Standard CC.3.5.11-12. G</b>  Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.  <b>Standard CC.3.5.11-12. H</b>  Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.  <b>Standard CC.3.5.11-12. I</b>  Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.J</b></p>	<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.  <b>Standard CC.3.6.9-10.E</b>  <b>Standard CC.3.6.11-12.E.</b>  Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.6.9-10.F</b>  <b>Standard CC.3.6.11-12.F</b>  Conduct short and more sustained research to answer a question or solve a problem.  <b>Standard CC.3.6.9-10.G.</b>  <b>Standard CC.3.6.11-12.G</b>  Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.  <b>Standard CC.3.6.9-10.H.</b>  <b>Standard CC.3.6.11-12.H.</b>  Draw evidence from informational texts to support analysis, reflection, and research.</p> <p><b>RANGE OF WRITING</b>  <b>GRADES 9-10-11-12</b>  <b>Standard CC.3.5.9-10.I &amp; Standard CC.3.5.11-12.I.</b>  Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	
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		<b>Standard CC.3.5.11-12.J</b> By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently.		
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