



Plumbing Technology/Plumber, Classification of Instructional Program (CIP) 46.0503

Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

100 Demonstrate Personal Safety in the Training Laboratory

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>101 Demonstrate and follow rules for fire safety.</p> <p>102 Demonstrate and follow rules for housekeeping safety.</p> <p>103 Demonstrate and follow shop rules.</p> <p>104 Demonstrate and follow rules for material handling safety.</p> <p>105 Demonstrate and follow rules for eye protection.</p> <p>106 Demonstrate and follow rules for hearing protection.</p> <p>107 Demonstrate and follow rules for respiratory protection.</p> <p>108 Demonstrate and follow rules for hand tool safety.</p> <p>109 Demonstrate and follow rules for power equipment safety.</p> <p>110 Demonstrate and follow rules for portable electric hand tool safety.</p> <p>111 Demonstrate and follow rules for SDS safety.</p> <p>112 Demonstrate and follow safety rules as they relate to E.C.P. (Exposure Control Procedures: blood borne pathogens, etc.).</p> <p>113 Demonstrate knowledge of the Occupational Safety Health Act (OSHA) and state its purposes.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc....</p> <p>Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc...</p> <p>Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc....</p> <p>Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc...</p> <p>Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words...</p> <p>Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc.</p> <p>Standard CC.3.5.9-10.F</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p>Standard CC.3.6.9-10 D Develop and strengthen writing as needed.</p> <p>Standard CC.3.6.9-10.E Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>PRODUCTION & DISTRIBUTION</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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		<p>Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>INTEGRATE KNOWLEDGE/ IDEAS GRADES 9-10 Standard CC.3.5.9-10.G. Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10.H. Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10.I. Compare and contrast findings presented in a text to those from other sources, etc...</p> <p>INTEGRATE KNOWLEDGE/ IDEAS GRADES 11-12 Standard CC.3.5.11-12.G. Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. Standard CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12.I. Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J AND Standard CC.3.5.11-12.J.</p>	<p>OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH GRADES 9-10 Standard CC.3.6.9-10.F. Conduct short and more sustained research. Standard CC.3.6.9-10.G. Gather relevant information. Standard CC.3.6.9-10.H. Draw evidence from informational texts.</p> <p>RESEARCH GRADES 11-12 Standard CC.3.6.11-12.F. Conduct short and more sustained research. Standard CC.3.6.11-12.G. Gather relevant information. Standard CC.3.6.11-12.H. Draw evidence from informational texts for research.</p> <p>RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I and Standard CC.3.5.11-12.I. Write over extended 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.		

200 Reserved

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201 RESERVED 202 RESERVED 203 RESERVED				

300 Read Blueprints and Sketching of Pipe Systems

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<p>301 Identify types of drawings.</p> <p>302 Identify the various lines used on drawings.</p> <p>303 Interpret specifications, and dimensions.</p> <p>304 Identify the three basic views of a drawing.</p> <p>305 Identify piping systems according to color-coding.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc....</p> <p>Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc...</p> <p>Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc....</p> <p>Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc...</p> <p>Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words...</p> <p>Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc.</p> <p>Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words...</p> <p>Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text.</p> <p>Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p>Standard CC.3.6.9-10 D Develop and strengthen writing as needed.</p> <p>Standard CC.3.6.9-10.E Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p>Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed.</p> <p>Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>ALGEBRA Standard. 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard. 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p>Standard. 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard. 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>Standard CC.2.4.HS.B.5 Make inferences and justify conclusions based on sample surveys, experiments, and observational studies.</p> <p>Standard CC.2.2.HS.D.3 Extend</p>

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				<p>Standard CC.2.3.HS.A.9 Extend the concept of similarity to determine arc lengths and areas of sectors of circles.</p> <p>Standard CC.2.3.HS.A.10 Translate between the geometric description and the equation for a conic section.</p> <p>Standard CC.2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraically.</p> <p>Standard CC.2.3.HS.A.12 Explain volume formulas and use them to solve problems.</p> <p>Standard CC.2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects.</p> <p>Standard CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p>

400 Demonstrate Knowledge of Pipe Specifications and Systems

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<p>401 Identify pipe and connections according to specification.</p> <p>402 Demonstrate knowledge of plumbing standards, codes and specifications.</p> <p>403 Read and interpret plumbing specifications.</p> <p>404 RESERVED</p> <p>405 Explain the effects and corrective measures for thermal expansion in piping system.</p> <p>406 Explain types and applications of pipe insulation.</p> <p>407 Identify various metals and specification process used in the plumbing and heating industry.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc....</p> <p>Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc...</p> <p>Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc....</p> <p>Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc...</p> <p>Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words...</p> <p>Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc.</p> <p>Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words...</p> <p>Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text.</p> <p>Standard CC.3.5.11-12.F Analyze the author's purpose in providing</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p>Standard CC.3.6.9-10 D Develop and strengthen writing as needed.</p> <p>Standard CC.3.6.9-10.E Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6.11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p>Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed.</p> <p>Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane.</p> <p>Standard CC.2.3.HS.A.2 Apply rigid transformations to determine and explain congruence.</p> <p>Standard C.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.</p> <p>Standard CC.2.3.HS.A.4 Apply the concept of congruence to create geometric constructions.</p> <p>Standard CC.2.3.HS.A.5 Create justifications based on transformations to establish similarity of plane figures.</p> <p>Standard CC.2.3.HS.A.6 Verify and apply theorems involving similarity as they relate to plane figures.</p>

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500 Demonstrate Use of Hand and Power Tools

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<p>501 Identify basic hand tools, state their uses, and use them in the trade.</p> <p>502 Identify, safely use, and maintain power tools.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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

600 Identify and Install Valves

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>601 Identify usage and installation of backflow prevention devices.</p> <p>602 Identify and install types of valves that start and stop flow.</p> <p>603 Identify and install types of valves that regulate flow.</p> <p>604 Identify valves that relieve pressure.</p> <p>605 Explain the factors that influence valve selection.</p> <p>606 Disassemble and assemble various types of valves (such as gate valve, globe valve, and flush valve).</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	

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

700 Demonstrate Skill in Working with Copper Pipe

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>701 Demonstrate skills in joining, cutting and bending various types of copper pipe tubing: solder, compression, flare, swage, and press fit.</p> <p>702 Demonstrate skills in compression flaring, swaging and press fitting copper pipe.</p> <p>703 Prepare and braze a joint.</p> <p>704 Perform tests on soldered and brazed joints according to plumbing code.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet,</p>	

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

800 Demonstrate Skill in Various Types of Plastic Pipe and Tubing

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>801 Measure, cut, and assemble PVC, CPVC, and ABS.</p> <p>802 Measure, cut, and assemble PEX plastic tubing, and PE and HDPE.</p> <p>803 Fabricate a crimp joint connection.</p> <p>804 Fabricate a tubing type joint.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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

900 Install Pipe Hangers and Supports

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>901 Use hangers to secure horizontal and vertical pipe lines to masonry, metal, and wood.</p> <p>902 Layout, anchor, and install various carrier fixtures.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6.11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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>INTEGRATE KNOWLEDGE/ IDEAS GRADES 9-10 Standard CC.3.5.9-10.G. Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10.H. Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10.I. Compare and contrast findings presented in a text to those from other sources, etc...</p> <p>INTEGRATE KNOWLEDGE/ IDEAS GRADES 11-12 Standard CC.3.5.11-12.G. Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. Standard CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12.I. Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J AND Standard CC.3.5.11-12.J. By the end of grades 9-10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p>RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I AND Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	

1000 Install Water Distribution Lines

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>1001 Perform tests on water distribution lines that meet plumbing code.</p> <p>1002 Rough-in water supply lines for bathtubs, wall mounted urinals, water closets, clothes washer, kitchen sink, and lavatories according to manufacturers' sheet.</p> <p>1003 Demonstrate knowledge of a water distribution whirlpool tub installation.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING RADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH GRADES 9-10 Standard CC.3.6.9-10.F. Conduct</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane. Standard CC.2.3.HS.A.2 Apply rigid transformations to determine and explain congruence. Standard C.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. Standard CC.2.3.HS.A.4 Apply the concept of congruence to create geometric constructions. Standard CC.2.3.HS.A.5 Create justifications based on transformations to establish similarity of plane figures. Standard CC.2.3.HS.A.6 Verify and apply theorems involving similarity as they relate to plane figures.</p>

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>INTEGRATE KNOWLEDGE/ IDEAS GRADES 9-10 Standard CC.3.5.9-10.G. Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10.H. Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10.I. Compare and contrast findings presented in a text to those from other sources, etc...</p> <p>INTEGRATE KNOWLEDGE/ IDEAS GRADES 11-12 Standard CC.3.5.11-12.G. Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. Standard CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12.I. Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J AND Standard CC.3.5.11-12.J. By the end of grades 9-10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>short and more sustained research. Standard CC.3.6.9-10.G. Gather relevant information. Standard CC.3.6.9-10.H. Draw evidence from informational texts.</p> <p>RESEARCH GRADES 11-12 Standard CC.3.6.11-12.F. Conduct short and more sustained research. Standard CC.3.6.11-12.G. Gather relevant information. Standard CC.3.6.11-12.H. Draw evidence from informational texts for research.</p> <p>RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I and Standard CC.3.5.11-12.I. Write over extended and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>Standard CC.2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. Standard CC.2.3.HS.A.8 Apply geometric theorems to verify properties of circles. Standard CC.2.3.HS.A.9 Extend the concept of similarity to determine arc lengths and areas of sectors of circles. Standard CC.2.3.HS.A.10 Translate between the geometric description and the equation for a conic section. Standard CC.2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraically. Standard CC.2.3.HS.A.12 Explain volume formulas and use them to solve problems. Standard CC.2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects. Standard CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p>

1100 Demonstrate Skill in Working with Steel Pipe

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>1101 Thread steel pipe with an adjustable die, power threading machine, and non-adjustable die.</p> <p>1102 Measure, cut, ream, assemble, and test various types of steel piping.</p> <p>1103 Adapt steel pipe to other piping materials.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH GRADES 9-10 Standard CC.3.6.9-10.F. Conduct</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane. Standard CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p>

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

1200 Demonstrate Skill in Working with Cast Iron Pipe

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>1201 Identify and use tools for working with cast iron pipe.</p> <p>1202 Measure and cut cast iron soil pipe with a chain cutter.</p> <p>1203 Assemble cast iron to various pipe types with no hub, Fernco, and rubber gasket joints.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH GRADES 9-10 Standard CC.3.6.9-10.F. Conduct</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane. Standard CC.2.3.HS.A.12 Explain volume formulas and use them to solve problems. Standard CC.2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects. Standard CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p>

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

1300 Demonstrate Knowledge of a Builder's Leveler

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>1301 Identify and set up a builder's level. 1302 Set up the level shoot elevations and grade pipe.</p>	<p>CLUSTER: Architecture and Construction Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: Construction Careers Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p>Maintenance Operations Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane. Standard CC.2.3.HS.A.12 Explain volume formulas and use them to solve problems. Standard CC.2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects. Standard CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p>

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

1400 Build Drains and Sewers

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>1401 Lay out and establish grade/slope for drain lines.</p> <p>1402 Install backwater prevention valves.</p> <p>1403 Test a drain and sewer according to plumbing code.</p> <p>1404 Install air admittance valves.</p> <p>1405 Rough-in waste lines and vents for bathtubs, lavatories, dishwashers, water closets, showers, bidets, and urinals according to manufacturers' specifications.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane. Standard CC.2.3.HS.A.2 Apply rigid transformations to determine and explain congruence. Standard C.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. Standard CC.2.3.HS.A.4 Apply the concept of congruence to create geometric constructions. Standard CC.2.3.HS.A.5 Create justifications based on transformations to establish similarity of plane figures. Standard CC.2.3.HS.A.6 Verify and apply theorems involving similarity as they relate to plane figures.</p>

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>INTEGRATE KNOWLEDGE/ IDEAS GRADES 9-10 Standard CC.3.5.9-10.G. Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). Standard CC.3.5.9-10.H. Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10.I. Compare and contrast findings presented in a text to those from other sources, etc...</p> <p>INTEGRATE KNOWLEDGE/ IDEAS GRADES 11-12 Standard CC.3.5.11-12.G. Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. Standard CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. Standard CC.3.5.11-12.I. Synthesize information from a range of sources into a coherent understanding.</p> <p>RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J AND Standard CC.3.5.11-12.J. By the end of grades 9-10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>	<p>GRADES 9-10 Standard CC.3.6.9-10.F. Conduct short and more sustained research. Standard CC.3.6.9-10.G. Gather relevant information. Standard CC.3.6.9-10.H. Draw evidence from informational texts.</p> <p>RESEARCH GRADES 11-12 Standard CC.3.6.11-12.F. Conduct short and more sustained research. Standard CC.3.6.11-12.G. Gather relevant information. Standard CC.3.6.11-12.H. Draw evidence from informational texts for research.</p> <p>RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I and Standard CC.3.5.11-12.I. Write over extended and shorter time frames for a range of tasks, purposes and audiences...etc.</p>	<p>Standard CC.2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. Standard CC.2.3.HS.A.8 Apply geometric theorems to verify properties of circles. Standard CC.2.3.HS.A.9 Extend the concept of similarity to determine arc lengths and areas of sectors of circles. Standard CC.2.3.HS.A.10 Translate between the geometric description and the equation for a conic section. Standard CC.2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraically. Standard CC.2.3.HS.A.12 Explain volume formulas and use them to solve problems. Standard CC.2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects. Standard CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p>

1500 Install Fixtures

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>1501 Install tank-type water closets. 1502 Install bathtubs. 1503 Install wall mounted lavatories. 1504 Install wall mounted urinals. 1505 Install kitchen sink. 1506 Install prefabricated shower base drains. 1507 Install built-in lavatories. 1508 Install flush valve-type water closets. 1509 Install traps and cleanouts.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane. Standard CC.2.3.HS.A.12 Explain volume formulas and use them to solve problems. Standard CC.2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects. Standard CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p>

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

1600 Install Appliances

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>1601 Describe the installation of a dishwasher.</p> <p>1602 Describe the installation of an electric water heater.</p> <p>1603 Describe the installation of a gas water heater.</p> <p>1604 Describe the installation of a clothes washing machine.</p> <p>1605 Describe the installation of other water heaters (for example, oil, tankless, or heat pump).</p> <p>1606 Describe the installation of a water re-circulating pump.</p> <p>1607 Describe the installation of al garbage disposal unit.</p> <p>1608 Describe the installation of a sump pump.</p> <p>1609 Describe the installation of a sewerage pump.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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

1700 Install Vents

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>1701 Install soil or waste back vents. 1702 Install soil or waste loop vents. 1703 Demonstrate knowledge for installation of a vent terminal (roof-flashing).</p>	<p>CLUSTER: Architecture and Construction Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: Construction Careers Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p>Maintenance Operations Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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
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1800 Maintain Plumbing Systems

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>1801 Clear obstructions from lavatory drains.</p> <p>1802 Remove obstructions from main drain lines.</p> <p>1803 Remove obstructions from water closets</p> <p>1804 Repair/replace lavatory trap drains, and leaking water faucets or valves.</p> <p>1805 Repair leaking shower valves.</p> <p>1806 Repair water flush valves on water closets.</p> <p>1807 Replace a damaged section of galvanized water plumbing system.</p> <p>1808 Explain how to thaw frozen pipes.</p> <p>1809 Disassemble "P" traps to clear lavatory drains.</p> <p>1810 Repair/replace any type of water closets.</p> <p>1811 Replace all components in a tank style toilet.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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1900 Perform Tests on Piping Systems

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>1901 Perform head pressure tests. 1902 Perform hydrostatic tests. 1903 Perform leak tests on gas supply lines.</p>	<p>CLUSTER: Architecture and Construction Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: Construction Careers Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p>Maintenance Operations Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	

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2000 Perform Advanced Pipe Fabrication

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>2001 Calculate simple piping offsets.</p> <p>2002 Calculate three-line, 45° equal-spread offsets around a vessel.</p> <p>2003 Calculate three-line, 45° unequal-spread offsets.</p> <p>2004 Convert center, back throat, and/or face measurement to an end measurement.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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2100 Work with Pressure Boilers

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>2101 Identify and explain various boiler fittings and accessories, including thermal expansion devices.</p> <p>2102 Discuss the various types of boilers.</p> <p>2103 Identify and explain various boiler, steam, and hot water fittings and piping.</p> <p>2104 Identify and explain feed water accessories.</p> <p>2105 Identify and explain steam and hot water accessories.</p> <p>2106 Explain the operation of a boiler and its various controls.</p> <p>2107 Explain the operation of the draft controls.</p> <p>2108 Identify and explain boiler safety.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane. Standard CC.2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. Standard CC.2.3.HS.A.12 Explain volume formulas and use them to solve problems. Standard CC.2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects. Standard CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p>

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2200 Work with Hydronic Heating Systems

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>2201 Describe and design a hydronic heating system.</p> <p>2202 Describe and design primary and secondary loops.</p> <p>2203 Calculate, lay-out, and design a radiant floor system.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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

2300 Demonstrate Safe Use of Ladders and Scaffolds

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>2301 Identify the different types of ladders and scaffolds used on a worksite.</p> <p>2302 Properly set up, inspect, and use, stepladders, extension ladders, and scaffolding.</p>	<p>CLUSTER: <i>Architecture and Construction</i> Choose Cluster Standards from: 1-2-3-4-5-6-7</p> <p>2 PATHWAYS: <i>Construction Careers</i> Choose Standards from: 1-2-3-4-5-6-7-8-9</p> <p><i>Maintenance Operations</i> Choose standards from 1-2-3-4-5-6</p>	<p>KEY IDEAS/DETAILS GRADES 9-10 Standard CC.3.5.9-10.A. Cite specific textual evidence, etc.... Standard CC.3.5.9-10B & Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.9-10.C Follow precisely a complex multistep procedure, etc...</p> <p>KEY IDEAS/DETAILS GRADES 11-12 Standard CC.3.5.11-12A Cite specific textual evidence, etc.... Standard CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; etc... Standard CC.3.5.11-12.C. Follow precisely a complex multistep procedure, etc...</p> <p>CRAFT & STRUCTURE GRADES 9-10 Standard CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.9-10.E Analyze the structure of the relationships among concepts in a text. etc. Standard CC.3.5.9-10.F Analyze the author's purpose in providing an explanation, describing a procedure...</p> <p>CRAFT & STRUCTURE GRADES 11-12 Standard CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain specific words... Standard CC.3.5.11-12.E. Analyze the structure of the relationships among concepts in a text. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedure...</p>	<p>TEXT TYPES AND PURPOSE GRADES 9-10 Standard CC.3.6.9-10.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>TEXT TYPES AND PURPOSE GRADES 11-12 Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10 Standard CC.3.6.9-10.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.9-10.E Use technology, including the internet, to share writing products.</p> <p>PRODUCTION & DISTRIBUTION OF WRITING GRADES 11-12 Standard CC.3.6...11-12 C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Develop and strengthen writing as needed. Standard CC.3.6.11-12.D. Develop and strengthen writing as needed. Standard CC.3.6.11-12.E. Use technology, including the internet, to...share writing products.</p> <p>RESEARCH</p>	<p>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p> <p>GEOMETRY Standard CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane. Standard CC.2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. Standard CC.2.3.HS.A.12 Explain volume formulas and use them to solve problems. Standard CC.2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects. Standard CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p>

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