

Drafting and Design Technology/Technician, General, Classification of Instructional Program (CIP) 15.1301 Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

Common Career

Secondary Competency Task Grid

with Unit and Task Numbers	Technical Core Standards	Reading for Technical Subjects Standard 3.5	Standards for Writing for Technical Subjects Standard 3.6	Standards for Mathematics Standard 2.1
100 ORIENTATION. 101 Demonstrate safety in the drafting room. 102 Demonstrate professionalism.	CAREER CLUSTER Architecture & Construction Careers (Choose Standards) 1-2-3-4-5-6-7 PATHWAYS INCLUDE Design/Pre-construction Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a		

Pennsylvania Core Standards for

Pennsylvania Core

Pennsylvania Core

 ,
Standard CC.3.5.9-10.F
Standard CC.3.5.11-12.F
Analyze the author's purpose in
providing an explanation, describing
a procedureand
Analyze the structure of the
relationships among concepts in a
text.
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.
INTEGRATE KNOWLEDGE &
IDEAS
GRADES 11-12
Standard CC.3.5.11-12. G
Integrate and evaluate multiple
sources of information presented in
diverse formatsto 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.
DANGE OF DEADING
RANGE OF READING
GRADES 9-10-11-12
Standard CC.3.5.9-10.J
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.	
200 INTROD DESIGN.	UCTION TO DRAFTING AND			
which are 202 RESERVI 203 Demonstr scales. 204 Demonstr of measur 205 Identify of	ate the knowledge of the basic uses of ate skill in using Imperial and Metric System ement. omponents of a drawing. nd select a letter style appropriate for	CAREER CLUSTER Architecture & Construction Careers (Choose Standards) 1-2-3-4-5-6-7 PATHWAYS INCLUDE Design/Pre-construction Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10. C Standard CC.3.5.9-10. C Standard CC.3.5.11-12. C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand Analyze the structure of the relationships among concepts in a text. INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G	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. ALGEBRA Standard 2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios. GEOMETRY Standard 2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. Standard 2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. Standard 2.3.HS.A.13

		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.	Analyze relationships between two dimensional and three dimensional objects.
		INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto 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.	
		RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J 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.	
300 GEOMETRIC CONSTRUCTION.			
301 Draw to scale. 302 Draw geometric figures. 303 Create drawings using geometric construction	CAREER CLUSTER Architecture & Construction Careers	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A	NUMBERS AND OPERATIONS Standard 2.1.HS.F.2

Standard CC.3.5.11-12 A

Cite specific textual evidence, etc. Standard CC.3.5.9-10 B

Apply properties of rational and irrational numbers to

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(Choose Standards)

1-2-3-4-5-6-7

principles.

PATHWAYS INCLUDE Design/Pre-construction Career Pathway

(Choose Standards) 1-2-3-4-5-6-7-8

NOTE:

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area. Standard CC.3.5.11-12. B

Determine the central ideas or conclusions of a text; etc.

Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C

Follow precisely a complex multistep procedure, etc.

CRAFT & STRUCTURE GRADES 9-10-11-12

Standard CC.3.5.9-10. D

Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a

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.

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.

ALGEBRA

Standard 2.2.HS.C.9

Prove the Pythagorean identity and use it to calculate trigonometric ratios.

GEOMETRY

Standard 2.3.HS.A.7

Apply trigonometric ratios to solve problems involving right triangles.

Standard 2.3.HS.A.3

Verify and apply geometric theorems as they relate to geometric figures.

Standard 2.3.HS.A.13

Analyze relationships between two dimensional and three dimensional objects.

INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto 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.	
understanding.	
RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J 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.	
texts independently and proficiently.	

400	RESERVED.				
401 402 403	RESERVED RESERVED RESERVED	CAREER CLUSTER Architecture & Construction Careers (Choose Standards) 1-2-3-4-5-6-7 PATHWAYS INCLUDE Design/Pre-construction Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc.	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.	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.
		NOTE: Refer to the Common Career Technical Core Standards Booklet if you	CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D	PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C	Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

wish to	add more	Determine the meaning of symbols,	Standard CC.3.6.11-12 C	Standard 2.1.HS.F.6
Pathwa	ys, for your local tional Area.	key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc.	Produce clear and coherent writingappropriate 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	Extend the knowledge of arithmetic operations and apply to complex numbers.
		Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand Analyze the structure of the relationships among concepts in a text.	planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including	
		INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G	the internet, to produce, publish, and update individual or shared writing products.	
		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	RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more	
		Assess the reasoning in a text to support the author's claim for solving a technical problem. Standard CC.3.5.9-10. I	sustained research to answer a question or solve a problem. Standard CC.3.6.9-10.G.	
		Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE &	Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format	
		INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem.	for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and	
		Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.	research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I &	

Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J	Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	
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.		

1-12 5.9-10.A	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A NUMBERS AND OPERATIONS Standard 2.1.HS.F	
focused on c content. 5.9-10.B 5.11-12.B c or including	Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. Apply properties of and irrational number solve real world or mathematical proble was a way to understand problems. Use units as a way to understand problems understand problems.	ms4 and to
1-12 59-10.C 5.11-12 C coherent ate to task, ence. 59-10 D 5.11-12.D agthen by	Produce clear and coherent writingappropriate 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,	curacy tions on 6.6 ge of s and mbers.
of diameters of the state of th	Standard CC.3.0 Produce clear and writingappropri purpose, and aud Standard CC.3.0 Standard CC.3.0 Develop and street writing as needed	Standard 2.1.HS.F. 6.11-12 C di coherent iate to task, icience. 6.9-10 D 6.11-12.D ngthen l by g, editing, ng a new ng on Standard 2.1.HS.F. Extend the knowledg arithmetic operations apply to complex nur GEOMETRY Standard 2.3.HS.A. Analyze relationship between two dimensi and three dimensiona

Analyze the structure of the relationships among concepts in a text.

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.

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.

RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J

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. significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H.

Draw evidence from informational texts to support analysis, reflection, and research.

RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.1 & 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.

600	INTRODUCTION TO ENGINEERING MATH.			
601 602 603 604 605	Use basic math operations to demonstrate scaling techniques. Use basic applied mathematics to solve engineering problems. Construct lines using relative, absolute, and polar coordinate systems. Establish the relationship among points, lines, and planes in 3-D space. Solve descriptive geometry problems.	CAREER CLUSTER Architecture & Construction Careers (Choose Standards) 1-2-3-4-5-6-7 PATHWAYS INCLUDE Design/Pre-construction Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc.Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.9-10.E Standard CC.3.5.11-12.F Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand Analyze the structure of the relationships among concepts in a text. 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	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. ALGEBRA Standard 2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios. GEOMETRY Standard 2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles. Standard 2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. Standard 2.3.HS.A.13 Analyze relationships between two dimensional and three dimensional objects.

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.
other sources, etc.
INTEGRATE KNOWLEDGE &
IDEAS
GRADES 11-12
Standard CC.3.5.11-12. G
Integrate and evaluate multiple
sources of information presented in
diverse formatsto 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.
RANGE OF READING
GRADES 9-10-11-12
Standard CC.3.5.9-10.J
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.

700	INTRODUCTION TO MECHANICAL DRAWING AND DESIGN.				
701 702 703 704 705 706 707	Identify and draw necessary orthographic views. Explain the relationship of orthographic projection to multi-view drawing. Identify 1st angle and 3rd angle projection. Identify and draw auxiliary views. Identify and draw section views. Identify and draw threads and fasteners. Create working drawings (assembly, detail drawings, BOM) Create a title block on a mechanical drawing.	CAREER CLUSTER Architecture & Construction Careers (Choose Standards) 1-2-3-4-5-6-7 PATHWAYS INCLUDE Design/Pre-construction Career Pathway	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B	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

(Choose Standards) 1-2-3-4-5-6-7-8

NOTE:

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.

Standard CC.3.5.11-12.C

Follow precisely a complex multistep procedure, etc.

CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D

Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

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.

INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12

Write informative or explanatory texts, including the narration of technical processes, etc.

PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12

Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writing...appropriate to task,

purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. 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.

ALGEBRA

Standard 2.2.HS.C.9 Prove the Pythagorean identity and use it to calculate trigonometric ratios.

GEOMETRY Standard 2.3.HS.A.7

Apply trigonometric ratios to solve problems involving right triangles.

Standard 2.3.HS.A.3

Verify and apply geometric theorems as they relate to geometric figures.

Standard 2.3.HS.A.13

Analyze relationships between two dimensional and three dimensional objects.

	Integrate and evaluate multiple sources of information presented in diverse formatsto 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. RANGE OF READING GRADES 9-10-11-12 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.	Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.
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800	DIMENSIONING.			
801 802 803 804 805	Apply measurements, notes, and symbols to a technical drawing. Apply ASME Standards for Dimensions, tolerances, and notes. Apply ISO Standards for Dimensions and notes. Specify dimensions and tolerances using symbols and notes. Reverse engineer a drawing from an existing part.	CAREER CLUSTER Architecture & Construction Careers (Choose Standards) 1-2-3-4-5-6-7 PATHWAYS INCLUDE Design/Pre-construction Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10. C Standard CC.3.5.9-10. C Standard CC.3.5.11-12. C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E	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.

Standard CC.3.5.11-12.E	
Analyze the structure of the	ALGEBRA
relationships among concepts in a	Standard 2.2.HS.C.9
text, etc.	Prove the Pythagorean
Standard CC.3.5.9-10.F	identity and use it to
Standard CC.3.5.11-12.F	calculate trigonometric
Analyze the author's purpose in	ratios.
providing an explanation, describing	rados.
a procedureand	GEOMETRY
Analyze the structure of the	Standard 2.3.HS.A.7
relationships among concepts in a	Apply trigonometric ratios
text.	to solve problems involving
	right triangles.
INTEGRATE KNOWLEDGE &	Standard 2.3.HS.A.3
IDEAS	Verify and apply geometric
GRADES 9-10	theorems as they relate to
	geometric figures.
Standard CC.3.5.9-10.G	Standard 2.3.HS.A.13
Translate quantitative or technical	Analyze relationships
information expressed in a text into	between two dimensional
visual form (e.g. a table or chart).	and three dimensional
Standard CC.3.5.9-10. H	objects.
Assess the reasoning in a text to	objects.
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.	
other sources, etc.	
INTEGRATE KNOWLEDGE &	
IDEAS	
GRADES 11-12	
Standard CC.3.5.11-12. G	
Integrate and evaluate multiple	
sources of information presented in	
diverse formatsto 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.	

		RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J 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.		
900 INTRODUCTION TO ARCHITECTURE.				
901 RESERVED 902 Construct a floor plan. 903 Construct an elevation. 904 Construct a typical wall section. 905 Draw a pictorial view. 906 RESERVED	CAREER CLUSTER Architecture & Construction Careers (Choose Standards) 1-2-3-4-5-6-7 PATHWAYS INCLUDE Design/Pre-construction Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.9-10 B Standard CC.3.5.9-10.C Standard CC.3.5.9-10.C Standard CC.3.5.11-12.C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words. Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E Analyze the structure of the relationships among concepts in a text, etc. Standard CC.3.5.11-12.F Analyze the author's purpose in providing an explanation, describing a procedureand Analyze the structure of the relationships among concepts in a text.	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12 C Produce clear and coherent writingappropriate to task, purpose, and audience. Standard CC.3.6.9-10 D Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.	

	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	Use technology, including the internet, to produce, publish, and update individual or shared writing products. RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F Conduct short and more	
	Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto 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. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical	a question or solve a problem. Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	
1000 INTRODUCTION TO CIVIL DRAFTING.	texts independently and proficiently.		

KEY IDEAS/DETAILS TEXT TYPES AND 1001 Construct a site plan. CAREER CLUSTER NUMBERS AND **GRADES 9-10-11-12 PURPOSE** 1002 RESERVED **OPERATIONS** Architecture & Standard CC.3.5.9-10. A GRADES 9-10-11-12 1003 RESERVED **Construction Careers** Standard 2.1.HS.F.2 1004 Read and interpret a deed. Standard CC.3.5.11-12 A **Standard CC.3.6.9-10.A** (Choose Standards) Apply properties of rational Cite specific textual evidence, etc. Standard CC.3.6.11-12.A 1005 Identify survey and/or GPS equipment. and irrational numbers to 1-2-3-4-5-6-7 Standard CC.3.5.9-10 B Write arguments focused on solve real world or discipline specific content. Standard CC.3.5.11-12. B mathematical problems. Standard CC.3.6.9-10.B Determine the central ideas or PATHWAYS INCLUDE Standard 2.1.HS.F.4 Standard CC.3.6.11-12.B conclusions of a text; etc. Design/Pre-construction **Standard CC.3.5.9-10.C** Write informative or Use units as a way to Career Pathway Standard CC.3.5.11-12.C explanatory texts, including understand problems and to (Choose Standards) the narration of technical Follow precisely a complex multistep guide the solution of 1-2-3-4-5-6-7-8 procedure, etc. processes, etc. multistep problems. Standard 2.1.HS.F.5 PRODUCTION & NOTE: **CRAFT & STRUCTURE** Choose a level of accuracy DISTRIBUTION OF Refer to the Common **GRADES 9-10-11-12** appropriate to limitations on WRITING **Career Technical Core** measurement when reporting Standard CC.3.5.9-10. D GRADES 9-10-11-12 Standards Booklet if you quantities. Standard CC.3.5.11-12.D Standard CC.3.6.9-10.C wish to add more Standard 2.1.HS.F.6 Standard CC.3.6.11-12 C Determine the meaning of symbols, Pathways, for your local Extend the knowledge of key terms, and other domain specific Produce clear and coherent Occupational Area. arithmetic operations and words. writing...appropriate to task, apply to complex numbers. purpose, and audience. Standard CC.3.5.9-10.E **Standard CC.3.6.9-10 D** Standard CC.3.5.11-12.E Standard CC.3.6.11-12.D Analyze the structure of the **ALGEBRA** Develop and strengthen relationships among concepts in a Standard 2.2.HS.C.9 writing as needed by text, etc. Prove the Pythagorean planning, revising, editing, Standard CC.3.5.9-10.F identity and use it to rewriting, or trying a new Standard CC.3.5.11-12.F calculate trigonometric approach, focusing on ratios. Analyze the author's purpose in addressing what is most providing an explanation, describing significant for a specific a procedure...and **GEOMETRY** purpose and audience. Analyze the structure of the Standard 2.3.HS.A.7 **Standard CC.3.6.9-10.E** relationships among concepts in a Apply trigonometric ratios to Standard CC.3.6.11-12.E. solve problems involving Use technology, including right triangles. the internet, to produce, Standard 2.3.HS.A.3 INTEGRATE KNOWLEDGE & publish, and update Verify and apply geometric **IDEAS** individual or shared writing theorems as they relate to **GRADES 9-10** products. geometric figures. **Standard CC.3.5.9-10.G** Standard 2.3.HS.A.13 Translate quantitative or technical RESEARCH Analyze relationships information expressed in a text into GRADES 9-10-11-12 between two dimensional and Standard CC.3.6.9-10.F visual form (e.g. a table or chart). three dimensional objects. Standard CC.3.6.11-12.F Standard CC.3.5.9-10. H Conduct short and more

sustained research to answer

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. INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12 Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto solve a problem. Standard CC.3.5.11-12. H Evaluate the hypotheses, data,	a question or solve a problem. Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12
	RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.
RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J 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.	

RODUCTION TO ELECTRICAL AND CTRONIC DRAFTING.				
tify and describe various symbols. te a schematic wiring diagram.	CAREER CLUSTER Architecture & Construction Careers (Choose Standards) 1-2-3-4-5-6-7 PATHWAYS INCLUDE Design/Pre-construction Career Pathway	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10.C	TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B	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

(Choose Standards) 1-2-3-4-5-6-7-8

NOTE:

Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.

Standard CC.3.5.11-12.C

Follow precisely a complex multistep procedure, etc.

CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D

Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E Standard CC.3.5.11-12.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F Standard CC.3.5.11-12.F

Analyze the author's purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

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.

INTEGRATE KNOWLEDGE & IDEAS GRADES 11-12

Write informative or explanatory texts, including the narration of technical processes, etc.

PRODUCTION & DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C

Standard CC.3.6.11-12 C Produce clear and coherent writing...appropriate to task,

Standard CC.3.6.9-10 D Standard CC.3.6.11-12.D

purpose, and audience.

Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E.

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH GRADES 9-10-11-12 Standard CC.3.6.9-10.F Standard CC.3.6.11-12.F

Conduct short and more sustained research to answer a question or solve a problem.

Standard CC.3.6.9-10.G. Standard CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. 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.

ALGEBRA Standard 2.2.HS.C.9

Prove the Pythagorean identity and use it to calculate trigonometric ratios.

GEOMETRY

Standard 2.3.HS.A.7

Apply trigonometric ratios to solve problems involving right triangles.

Standard 2.3.HS.A.3

Verify and apply geometric theorems as they relate to geometric figures.

Standard 2.3.HS.A.13

Analyze relationships between two dimensional and three dimensional objects.

	Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formatsto 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. RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J 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.	Standard CC.3.6.9-10.H. Standard CC.3.6.11-12.H. Draw evidence from informational texts to support analysis, reflection, and research. RANGE OF WRITING GRADES 9-10-11-12 Standard CC.3.5.9-10.I & Standard CC.3.5.11-12.I. Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiencesetc.	
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1200	COMPUTER ASSISTED DRAFTING (CAD).			
1201 1202 1203 1204 1205 1206 1207 1208 1209 1210 1211 1212 1213 1214 1215 1216	Use drawing and editing tools. Use viewing tools. Utilize a commercially built drafting library. Produce a custom built drafting library. Make a revision to an existing drawing. Configure and use dimensions and tolerances. Create 3-dimensional models. RESERVED Create parametric solid models. Render a drawing. Import, export, and link drawings. Manage and store files. Use rapid prototyping.	CAREER CLUSTER Architecture & Construction Careers (Choose Standards) 1-2-3-4-5-6-7 PATHWAYS INCLUDE Design/Pre-construction Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8 NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local Occupational Area.	KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10 B Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10. C Standard CC.3.5.9-10. C Standard CC.3.5.11-12. C Follow precisely a complex multistep procedure, etc. CRAFT & STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Standard CC.3.5.11-12.D Determine the meaning of symbols, key terms, and other domain specific words.	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.

Standard CC.3.5.9-10.E	
Standard CC.3.5.11-12.E	ALGEBRA
Analyze the structure of the	Standard 2.2.HS.C.9
relationships among concepts in a	Prove the Pythagorean
text, etc.	identity and use it to
Standard CC.3.5.9-10.F	calculate trigonometric
Standard CC.3.5.7-10.F Standard CC.3.5.11-12.F	<u> </u>
	ratios.
Analyze the author's purpose in	CEOMETRY
providing an explanation, describing	GEOMETRY Standard 2.2 HS A.7
a procedureand	Standard 2.3.HS.A.7
Analyze the structure of the	Apply trigonometric ratios
relationships among concepts in a	to solve problems involving
text.	right triangles.
	Standard 2.3.HS.A.3
INTEGRATE KNOWLEDGE &	Verify and apply geometric
IDEAS	theorems as they relate to
GRADES 9-10	geometric figures. Standard 2.3.HS.A.13
Standard CC.3.5.9-10.G	Analyze relationships
Translate quantitative or technical	between two dimensional
information expressed in a text into	and three dimensional
visual form (e.g. a table or chart).	objects.
Standard CC.3.5.9-10. H	objects.
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.	
INTEGRATE KNOWLEDGE &	
IDEAS	
GRADES 11-12	
Standard CC.3.5.11-12. G	
Integrate and evaluate multiple	
sources of information presented in	
diverse formatsto 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	
Stanuaru CC.3.3.11*12. 1	

Synthesize information from a range of sources into a coherent understanding.	
RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J 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.	