Career & Technical Education (CTE)
Standards Revision Project

Cluster: Architecture & Construction
Pathways: Design & Pre-Construction, Construction, Maintenance /Operations

Architecture & Construction Cluster Overview

The Architecture & Construction cluster prepares students for careers in designing, planning, managing, building and maintaining the built environment. People employed in this cluster work on new structures, restorations, additions, alterations, and repairs. Pathways related to professional and technical support for this cluster: Design/Pre-Construction, Construction and Maintenance/Operations & Repairs. (Source: www.careerclusters.org)

Ben Nesbitt, Program Director, Skilled Trades & Technical Sciences

Karen Ellis, Project Coordinator
Sherrie Schneider, Project Coordinator

Skilled Trades & Technical Sciences Content Team

Terry Angell Warren Tech	Rod Atkins Arapahoe Community College	Chuck Beck Red Rocks Community College
Madonna Crane Warren Tech	Gary Cryan Front Range Community College	Mike Daly Warren Tech
Vicki Flower Warren Tech	Rick Glesner Community College of Denver	Judi Maciel Warren Tech
Robert Maez Pueblo Community College	Chris Mathias Warren Tech	Doug Mugge Arapahoe Community College
Cathy Rock Red Rocks Community College	Charlotte Tallman Lamar Community College	Lorrie Toni Colorado Community College System
Mike Townsend Pickens Technical College	Vic Vandamme Warren Tech	Roger Weitzel Pueblo Community College
Janet Wilson Pikes Peak Community College	Kent Wright Northeastern Junior College	

Standards: Maintenance and Operations

Career Cluster/Cluster Grouping:	Architecture and Construction
Pathway(s):	**Maintenance and Operations**

Prepared Completer Competencies:

- **ACC 10. Technical Skills: Use the technical knowledge and skills required to pursue the targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster.**

High School Expectations

Concepts and skills students know include:

- **ACC 10.01 Read, interpret, and use technical drawings, documents, and specifications to plan a project.**

Evidence Outcomes – Students Can:	21st Century Skills and Readiness Competencies
a. Interpret drawings used in project planning. MAT01.02.a, MAT04.01.a, MAT04.01.b, MAT04.01.c, MAT04.01.d, MAT04.03.a, MAT04.03.b RWC01.01.b, RWC01.01.c, RWC01.01.e, RWC01.07.b, RWC02.02.d SCI01.01.b, SCI01.01.c PWR01.01b, PWR01.01e, PWR01.02.d, PWR02.01.a, PWR02.08.a, PWR02.09.c	**Academic Content Knowledge Alignment:** **MAT01.02.a-Mathematics, Number Sense, Properties, and Operations** • Formulate, represent, and use algorithms with real numbers flexibly, accurately, and efficiently. o Use appropriate computation methods that encompass estimation and **MAT03.01.a-Mathematics, Data Analysis, Statistics, and Probability**: • Statistical methods take variability into account, supporting informed decision-making through quantitative studies designed to answer specific questions o Formulate appropriate research questions that can be answered with statistical analysis **MAT03.01.b-Mathematics, Data Analysis, Statistics, and Probability:** • Statistical methods take variability into account, supporting informed decision-making through quantitative studies designed to answer specific questions o Determine appropriate data collection methods to answer a research question

b. Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work. Mat01.02.a, MAT03.01.a, MAT03.01.b, MAT03.01.c, MAT03.02.a, MAT03.02.b, MAT03.02.c, MAT03.03.a, M AT04.01.a, MAT04.01.b, MAT04.01.c, MAT04.01.d, RWC01.01.b, RWC01.01.e, RWC01.01.f, RWC01.07.b, RWC02.02.d PWR01.01.b, PWR01.01.e, PWR01.02.d, PWR02.01.a, PWR02.01.e, PWR02.08.a, PWR02.09.c	**MAT03.01.c-Mathematics, Data Analysis, Statistics, and Probability:** • Statistical methods take variability into account, supporting informed decision-making through quantitative studies designed to answer specific questions o Explain how data might be analyzed to provide answers to a research question **MAT03.02.a-Mathematics, Data Analysis, Statistics, and Probability:** • The design of an experiment or sample survey is of critical importance to analyzing the data and drawing conclusions o Identify the characteristics of a well-designed and **MAT03.02.b-Mathematics, Data Analysis, Statistics, and Probability:** • The design of an experiment or sample survey is of critical importance to analyzing the data and drawing conclusions o Identify the characteristics of a well-designed and well-conducted experiment **MAT03.02.c-Mathematics, Data Analysis, Statistics, and Probability:** • The design of an experiment or sample survey is of critical importance to analyzing the data and drawing conclusions o Differentiate between the inferences that can be drawn in experiments versus observational studies **MAT03.03.a-Mathematics, Data Analysis, Statistics, and Probability:** • Visual displays and summary statistics condense the information in data sets into usable knowledge o Identify and choose appropriate ways to summarize numerical or categorical data using tables, graphical displays, and numerical summary statistics (describing shape, center and spread) and accounting for outliers when appropriate **MAT04.01.a-Mathematics, Shape, Dimension, and Geometric Relationships:** • Attributes of two- and three-dimensional objects are measurable and can be quantified o Calculate (or estimate when appropriate) the perimeter and area of a two-dimensional irregular shape **MAT04.01.b-Mathematics, Shape, Dimension, and Geometric Relationships:** • Attributes of two- and three-dimensional objects are measurable and can be quantified o Justify, interpret, and apply the use of formulas for the surface area, and volume of cones, pyramids, and spheres including real-world situations **MAT04.01.c-Mathematics, Shape, Dimension, and Geometric Relationships:** • Attributes of two- and three-dimensional objects are measurable and can be quantified o Solve for unknown quantities in relationships involving perimeter, area,

	MAT04.01.d-Mathematics, Shape, Dimension, and Geometric Relationships: • Attributes of two- and three-dimensional objects are measurable and can be quantified o Apply the effect of dimensional change, utilizing appropriate units and scales in problem-solving situations involving perimeter, area, and volume **MAT04.03.a-Mathematics, Shape, Dimension, and Geometric Relationships:** • Objects in the plane can be transformed, and those transformations can be described and analyzed mathematically o Make conjectures involving two-dimensional objects represented with Cartesian coordinates. Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations **MAT04.03.b-Mathematics, Shape, Dimension, and Geometric Relationships;** • Objects in the plane can be transformed, and those transformations can be described and analyzed mathematically o Represent transformations (reflection, translation, rotation, and dilation) using Cartesian coordinates **RWC01.01.b-Reading, Writing, and Communicating, Oral Expression and Listening:** • Effective speaking in formal and informal settings requires appropriate use of methods and audience awareness o Identify a central idea or thesis, organize ideas, and develop a speech for an intended purpose and audience **RWC01.01.c-Reading, Writing, and Communicating, Oral Expression and Listening** • Effective speaking in formal and informal settings requires appropriate use of methods and audience awareness o Use examples, illustrations, graphics, quotations, analogies, facts, and statistics to focus and support the content of a presentation **RWC01.01.d-Reading, Writing, and Communicating, Oral Expression and Listening:** • Effective speaking in formal and informal settings requires appropriate use of methods and audience awareness o Use grammar and vocabulary appropriate for the situation, audience, topic, and purposes **RWC01.01.e-Reading, Writing, and Communicating, Oral Expression and Listening:** • Effective speaking in formal and informal settings requires appropriate use of methods and audience awareness o Choose specific words and word order for intended effect and meaning

RWC01.01.f-Reading, Writing, and Communicating, Oral Expression and Listening:

- Effective speaking in formal and informal settings requires appropriate use of methods and audience awareness
  - Select appropriate technical or specialized language

RWC01.07.b-Reading, Writing, and Communicating, Oral Expression and Listening

- Oral Presentations require effective preparation strategies
  - Use verbal and nonverbal techniques to communicate information

RWC02.02.d-Reading, Writing, and Communicating, Reading for All Purposes

- Interpreting and evaluating complex informational texts require the understanding of rhetoric, critical reading, and analysis skills
  - Explain and interpret the visual components supporting the text (maps, complex tables and diagrams, and transitional devices, such as use of white space)

SCI01.01.b-Science, Physical Science

- Newton's laws of motion and gravitation describe the relationships among forces acting on and between objects, their masses, and changes in their motion – but have limitations
  - Develop, communicate and justify an evidence-based analysis of the forces acting on an object and the resultant acceleration produced by a net force

SCI01.01.c-Science, Physical Science

- Newton's laws of motion and gravitation describe the relationships among forces acting on and between objects, their masses, and changes in their motion – but have limitations
  - Develop, communicate and justify an evidence-based scientific prediction regarding the effects of the action-reaction force pairs on the motion

Learning & Behavioral Skills – Post-Secondary & Workforce Readiness:

PWR01.01.b-Postsecondary & Workforce Readiness, Content Knowledge, Literacy

- Write clearly and coherently for a variety of purposes and audiences

PWR01.01.e-Postsecondary & Workforce Readiness, Content Knowledge, Literacy

- Employ standard English language properly and fluently in reading, writing, listening, and speaking

	PWR01.02.d-Postsecondary & Workforce Readiness, Content Knowledge, Mathematical Sciences • Apply knowledge of mathematics to problem solve, analyze issues, and make critical decisions that arise in everyday life **PWR02.01.a-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Critical Thinking and Problem Solving** • Apply logical reasoning and analytical skills **PWR02.01.e-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Critical Thinking and Problem Solving** • Evaluate the credibility and relevance of information, ideas, and arguments **PWR02.08.a-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Communication** • Read, write, listen and speak effectively **PWR02.09.c-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Collaboration** • Cooperate for a common purpose

High School Expectations

Concepts and skills students know include:

- **ACC 10.02 Use and Maintain appropriate tools, machinery, equipment, and resources to accomplish project goals.**

Evidence Outcomes – Students Can:	21st Century Skills and Readiness Competencies
a. Select tools, machinery, equipment, and resources that match requirements of the job. RWC01.01.b, RWC01.01.c,, RWC01.02.d, RWC01.02.e,, RWC01.05.a, RWC01.05.b, RWC01.05.c, RWC01.05.d, RWC02.02.c, RWC04.03.a, RWC04.03.b, RWC04.04.a, RWC04.04.b SCI01.04.d, SCI0105.d PWR02.01.a, PWR02.01.e b. Identify sources of information concerning state-of-the-art tools, equipment, materials, technologies and methodologies. RWC01.01.b, RWC01.01.c,, RWC01.02.d, RWC01.02.e,, RWC01.05.a, RWC01.05.b, RWC01.05.c, RWC01.05.d, RWC02.02.c, RWC04.03.a, RWC04.03.b, RWC04.04.a, RWC04.04.b SCI01.04.d, SCI01.05.d PWR02.01.e	**Academic Content Knowledge Alignment** **MAT02.01.a-Mathematics, Patterns, Functions, and Algebraic Structures:** • Functions model situations where one quantity determines another and can be represented algebraically, graphically, and using tables o Determine, using all tools including graphing technology, when a relation is a function using a table, a graph, or an equation **MAT02.01.b-Mathematics, Patterns, Functions, and Algebraic Structures:** • Functions model situations where one quantity determines another and can be represented algebraically, graphically, and using tables o Demonstrate the relationship between all representations of linear functions using point-slope, slope-intercept, and standard form of a line **MAT02.04.b-Mathematics, Patterns, Functions, and Algebraic Structures:** • Expressions, equations, and inequalities can be expressed in multiple, equivalent forms o Apply the properties of positive and negative rational exponents to generate equivalent algebraic expressions including those involving nth roots **MAT02.04.c-Mathematics, Patterns, Functions, and Algebraic Structures:** • Expressions , equations, and inequalities can be expressed in multiple, equivalent forms o Solve equations for one variable in terms of the others **MAT04.01.a-Mathematics, Shape, Dimension, and Geometric Relationships** • Attributes of two- and three-dimensional objects are measurable and can be quantified o Calculate (or estimate when appropriate) the perimeter and area of a two-dimensional irregular shape **MAT04.01.b-Mathematics, Shape, Dimension, and Geometric Relationships:** • Attributes of two- and three-dimensional objects are measurable and can be quantified o Justify, interpret, and apply the use of formulas for the surface area, and volume of cones, pyramids, and spheres including real-world situations

c.	Demonstrate use of tools, machinery, equipment and other resources commonly used in design and construction. MAT02.01.a, MAT02.01.b, MAT02.04.b, MAT02.04.c MAT04.01.a, MAT04.01.b, MAT04.01.d, MAT04.02.c. MAT04.02.d, MAT04.04.a, MAT04.04.b, MAT04.04.c, RWC01.01.b, RWC01.01.c,, RWC01.02.d, RWC01.02.e,, RWC01.05.a, RWC01.05.b, RWC01.05.c, RWC01.05.d, RWC02.02.c, RWC04.03.a, RWC04.03.b, RWC04.04.a, RWC04.04.b SCI01.04.d, SCI01.05.d PWR02.01.a, PWR02.06.d, PWR02.06.e, PWR02.06.f PWR02.07d, PWR02.09.a	**MAT04.01.d-Mathematics, Shape, Dimension, and Geometric Relationships:** • Attributes of two- and three-dimensional objects are measurable and can be quantified o Apply the effect of dimensional change, utilizing appropriate units and scales in problem-solving situations involving perimeter, area, and volume **MAT04.02.c-Mathematics, Shape, Dimension, and Geometric Relationships** • Objects in the plane and their parts, attributes, and measurements can be analyzed deductively o Know and apply properties of angles including corresponding, exterior, interior, vertical, complementary, and supplementary angles to solve problems. Justify the results using two-column proofs, paragraph proofs, flow charts, or illustrations **MAT04.02.d-Mathematics, Shape, Dimension, and Geometric Relationships:** • Objects in the plane and their parts, attributes, and measurements can be analyzed deductively o Develop conjectures and solve problems about geometric figures including definitions and properties (congruence, similarity, and symmetry). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, or illustrations **MAT04.04.a-Mathematics, Shape, Dimension, and Geometric Relationships:** • Right triangles are central to geometry and its applications o Apply right triangle trigonometry (sine, cosine, and tangent) to find indirect measures of lengths and angles **MAT04.04.b-Mathematics, Shape, Dimension, and Geometric Relationships:** • Right triangles are central to geometry and its applications o Apply the Pythagorean theorem and its converse to solve real-world problems **MAT04.04.c-Mathematics, Shape, Dimension, and Geometric Relationships:** • Right triangles are central to geometry and its applications o Determine the midpoint of a line segment and the distance between two points in the Cartesian coordinate plane **RWC01.01.b-Reading, Writing, and Communicating, Oral Expression and Listening:** • Effective speaking in formal and informal settings requires appropriate use of methods and audience awareness o Identify a central idea or thesis, organize ideas, and develop a speech for an intended purpose and audience

	RWC01.01.c-Reading, Writing, and Communicating, Oral Expression and Listening • Effective speaking in formal and informal settings requires appropriate use of methods and audience awareness o Use examples, illustrations, graphics, quotations, analogies, facts, and statistics to focus and support the content of a presentation **RWC01.02.c-Reading, Writing, and Communicating, Oral Expression and Listening** • Effective collaborative groups accomplish goals o Analyze differences in group perspectives to help bring the group to consensus or to solve a perceived problem **RWC01.02.d-Reading, Writing, and Communicating, Oral Expression and Listening,** • Effective collaborative groups accomplish goals o Participate in the preparations of the group activity or product, defining and assuming individual roles **RWC01.02.e-Reading, Writing, and Communicating, Oral Expression and Listening** • Effective collaborative groups accomplish goals o Assume a leadership role in a group that is collaboratively working to accomplish a goal **RWC01.05.a-Reading, Writing, and Communicating, Oral Expression and Listening:** • Content that is gathered carefully and organized well successfully influences an audience o Organize and deliver a presentation that influences a specific audience **RWC01.05.b-Reading, Writing, and Communicating, Oral Expression and Listening** • Content that is gathered carefully and organized well successfully influences an audience o Reflect on the content and approach to a presentation

	RWC01.05.c-Reading, Writing, and Communicating, Oral Expression and Listening: • Content that is gathered carefully and organized well successfully influences an audience o Select organizational patterns and structures and choose precise vocabulary and rhetorical devices **RWC01.05.d-Reading, Writing, and Communicating, Oral Expression and Listening:** • Content that is gathered carefully and organized well successfully influences an audience o Make decisions about how to establish credibility and enhance appeal to the audience **RWC01.06.e-Reading, Writing, and Communicating, Oral Expression and Listening** • Effectively operating in small and large groups to accomplish a goal requires active listening o Support others in discussions, activities, and presentations **RWC02.02.c-Reading, Writing, and Communicating, Reading for All Purposes** • Interpreting and evaluating complex informational texts require the understanding of rhetoric, critical reading, and analysis skills o Obtain and use information from text and text features (index, bold or italicized text, subheadings, graphics) to answer questions, perform specific tasks, or identify and solve problems **RWC04.03.a-Reading, Writing, and Communicating, Research and Reasoning:** • Self-designed research provides insightful information, conclusions, and possible solutions o Define and narrow a topic for research (thesis statement, hypothesis, research question) to address a specific purpose and audience **RWC04.03.b-Reading, Writing, and Communicating, Research and Reasoning:** • Self-designed research provides insightful information, conclusions, and possible solutions o Evaluate and revise research questions for precision and clarity

RWC04.04.a-Reading, Writing, and Communicating, Research and Reasoning:

- Complex situations require critical thinking across multiple disciplines
  - Analyze the logic of complex situations by questioning the purpose, question at issue, information, points of view, implications and consequences inferences, assumptions and concepts

RWC04.04.b-Reading, Writing, and Communicating, Research and Reasoning:

- Complex situations require critical thinking across multiple disciplines
  - Evaluate strengths and weaknesses of their logic and logic of others by using criteria including relevance, clarity, accuracy, fairness, significance, depth, breadth, logic and precision

SCI01.04.d-Science, Physical Science:

- Atoms bond in different ways to form molecules and compounds that have definite properties
  - Describe the role electrons play in atomic bonding

SCI01.05.d-Science, Physical Science

- Energy exists in many forms such as mechanical, chemical, electrical, radiant, thermal, and nuclear, that can be quantified and experimentally determined
  - Identify different energy forms, and calculate their amounts by measuring their defining characteristics

Learning & Behavioral Skills – Post-Secondary & Workforce Readiness:

PWR02.01.a-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Critical Thinking and Problem Solving

- Apply logical reasoning and analytical skills

PWR02.01.e-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Critical Thinking and Problem Solving

- Evaluate the credibility and relevance of information, ideas, and arguments

PWR02.06.d-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Work Ethic

- Learn from instruction and criticism

PWR02.06.e-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Work Ethic

- Take responsibility for completion of work

	PWR02.06.f-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Work Ethic • Act with maturity, civility, and politeness **PWR02.07.d-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Personal Responsibility** • Take responsibility for actions **PWR02.09.a-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Collaboration** • Work effectively with others

High School Expectations

Concepts and skills students know include:

- **ACPC 03.01 Apply construction skills when repairing, restoring, or renovating existing structures to ensure long term use of buildings and structures.**

Evidence Outcomes – Students Can:	21st Century Skills and Readiness Competencies
a. Plan solution to restoration problem upon evaluation. MAT01.02.a, MAT03.01.b, MAT03.01.c, MAT04.02.c, RWC02.02.c, SCI01.04.d, SCI01.05.d PWR02.01a, PWR02.01.e, PWR02.06.a, PWR02.09.a, PWR02.09.b, PWR02.09.c, PWR02.09.d b. Determine materials required to complete restoration. MAT01.02.a, MAT03.01.b, MAT03.01.c, MAT04.02.c, MAT04.06.a, MAT04.06.b, MAT04.06.c, RWC02.02.c, SCI01.04.d, SCI01.05.d PWR01.02.d, PWR02.01.a	**Academic Content Knowledge Alignment:** **MAT01.02.a-Mathematics, Number Sense, Properties, and Operations** • Formulate, represent, and use algorithms with real numbers flexibly, accurately, and efficiently. o Use appropriate computation methods that encompass estimation and calculation **MAT03.01.b-Mathematics, Data Analysis, Statistics, and Probability** • Statistical methods take variability into account, supporting informed decision-making through quantitative studies designed to answer specific questions o Determine appropriate data collection methods to answer a research question **MAT03.01.c-Mathematics, Data Analysis, Statistics, and Probability:** • Statistical methods take variability into account, supporting informed decision-making through quantitative studies designed to answer specific questions o Explain how data might be analyzed to provide answers to a research question **MAT04.02.c-Mathematics, Shape, Dimension, and Geometric Relationships** • Objects in the plane and their parts, attributes, and measurements can be analyzed deductively o Know and apply properties of angles including corresponding, exterior, interior, vertical, complementary, and supplementary angles to solve problems. Justify the results using two-column proofs, paragraph proofs, flow charts, or illustrations **MAT04.04.a-Mathematics, Shape, Dimension, and Geometric Relationships:** • Right triangles are central to geometry and its applications o Apply right triangle trigonometry (sine, cosine, and tangent) to find indirect measures of lengths and angles **RWC02.02.c-Reading, Writing, and Communicating, Reading for All Purposes:** • Interpreting and evaluating complex informational texts require the understanding of rhetoric, critical reading, and analysis skills o Obtain and use information from text and text features (index, bold or italicized text, subheadings, graphics) to answer questions, perform specific tasks, or identify and solve problems

c. Implement strategies that produce a restored structure.
 	
MAT01.02.a, MAT03.01.b, MAT03.01.c, MAT04.02.c,
 	
RWC02.02.c,
 	
SCI01.04.d, SCI0105.d
 	
PWR01.02.d, PWR02.01.a, PWR02.06.a, PWR02.06.b, PWR02.06.c, PWR02.06.d, PWR02.06.e, PWR02.07.g, PWR02.09.a, PWR02.09.b, PWR02.09.c, PWR02.09.d
	SCI01.04.d-Science, Physical Science:
	• Atoms bond in different ways to form molecules and compounds that have definite properties
	  o Describe the role electrons play in atomic bonding
	
	SCI01.05.d-Science, Physical Science
	• Energy exists in many forms such as mechanical, chemical, electrical, radiant, thermal, and nuclear, that can be quantified and experimentally determined
	  o Identify different energy forms, and calculate their amounts by measuring their defining characteristic
	
	Learning & Behavioral Skills – Post-Secondary & Workforce Readiness:
	
	PWR01.02.d-Postsecondary & Workforce Readiness, Content Knowledge, Mathematical Sciences
	• Apply knowledge of mathematics to problem solve, analyze issues, and make critical decisions that arise in everyday life
	
	PWR02.01.a-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Critical Thinking and Problem Solving
	• Apply logical reasoning and analytical skills
	
	PWR02.01.e-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Critical Thinking and Problem Solving
	• Evaluate the credibility and relevance of information, ideas, and arguments
	
	PWR02.06.a-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Work Ethic
	• Plan and prioritize goals
	
	PWR02.06.b-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Work Ethic
	• Manage time effectively
	
	PWR02.06.c-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Work Ethic
	• Take initiative, and follow directions
	
	PWR02.06.d-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Work Ethic
	• Learn from instruction and criticism

	PWR02.06.e-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Work Ethic • Take responsibility for completion of work **PWR02.07.g-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Personal Responsibility** • Attend to personal health and wellness **PWR02.09.a-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Collaboration** o Work effectively with others **PWR02.09.b-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Collaboration** o Acknowledge authority and take direction **PWR02.09.c-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Collaboration** o Cooperate for a common purpose **PWR02.09.d-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Collaboration** o Use teamwork and leadership skills effectively

High School Expectations

Concepts and skills students know include:

*** ACP 03.03 Plan and practice preventative maintenance activities to service existing structures.**

Evidence Outcomes Students Can:	21st Century Skills and Readiness Competencies
a. Develop a checklist to track preventative maintenance. RWC04.03.c PWR02.01.a, PWR02.06.a, PWR02.08.a b. Identify tools and materials needed to perform preventative maintenance. RWC04.03.c, SCI01.05.d PWR02.01.a, PWR02.01.e	**Academic Content Knowledge Alignment** **RWC04.03.c-Reading, Writing, and Communicating, Research and Reasoning** • Self-designed research provides insightful information, conclusions, and possible solutions o Evaluate quality, accuracy, and completeness of information and the bias, credibility and reliability of the sources **SCI01.05.d-Science, Physical Science** • Energy exists in many forms such as mechanical, chemical, electrical, radiant, thermal, and nuclear, that can be quantified and experimentally determined o Identify different energy forms, and calculate their amounts by measuring their defining characteristics **Learning & Behavioral Skills – Post-Secondary & Workforce Readiness** **PWR02.01.a-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Critical Thinking and Problem Solving** • Apply logical reasoning and analytical skills **PWR02.01.e-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Critical Thinking and Problem Solving** • Evaluate the credibility and relevance of information, ideas, and arguments **PWR02.06.a-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Work Ethic** • Plan and prioritize goals **PWR02.08.a-Postsecondary & Workforce Readiness, Learning and Behavior Skills, Communication** • Read, write, listen and speak effectively