BUILDING CONSTRUCTION AND BASIC CARPENTRY THEORY 1	
CURRICULUM/CONTENT AREA	COURSE LENGTH
Applied & Technical Education (ATE)	*9 weeks*
GRADE LEVEL	DATE LAST REVIEWED
9-12	*2023*
PREREQUISITE(s) *if applicable*	BOARD APPROVAL DATE
none	*9/10/2024*
PRIMARY RESOURCE *if applicable*	

DESIRED RESULTS

COURSE DESCRIPTION AND PURPOSE

This course is an introduction to the basic building materials, components, methods, and sequences in residential construction. It is designed to give students basic, entry level exposure and skills in construction and related trades along with an overview of extensive career opportunities available. This hands-on project based course will expose students to the systems involved in residential construction including carpentry, electrical and plumbing.

ENDURING UNDERSTANDINGS *Students will understand that...*	ESSENTIAL QUESTIONS *Students will keep considering...*
Creativity, innovation, and critical thinking are essential for success in a technologically advanced world.	Why is creativity and innovation important? How is creativity and innovation used in [name of career pathway]?
	How do teams efficiently and effectively solve problems in an increasingly complex world?
	What strategies and processes can I use to become a more effective creator, thinker and problem solver?
The ability to communicate and collaborate with people with diverse backgrounds and perspectives is key to participation in a global economic society.	Why is communication and collaboration important? How do positive work behaviors and personal qualities impact communication and collaboration?

	What is effective teamwork? What strategies can I use/teams use to work better together? How can perspectives and experiences of a diverse group develop innovative solutions to a given problem?
Career and technical education provides pathways to high-demand, high-wage career opportunities, and personal fulfillment.	Why is career and life readiness important? What jobs and careers are available to meet individual and societal needs locally, regionally, and nationally?
	How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?
	What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?

PRIORITY CAREER & TECHNICAL STANDARDS
Students will be skilled at...

Creativity, Critical Thinking, Communication and Collaboration
4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.
a: I develop effective resolutions for a given problem, decision or opportunity using available information.
b: I develop and implement a resolution for a new situation using personal knowledge and experience.

Career Development
CD4: Students will identify and apply employability skills.
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.
b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.
c: I identify and exhibit traits for retaining employment.
d: I develop positive relationships with others.

Information, Media, Technology
IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.
a: I choose appropriate sources of data and information for a given purpose.
b: I determine the relevance, validity and timeliness of data and information.
c: I select relevant information necessary for making decisions and solving problems
d: I apply data and information to communicate ideas and create new opportunities.

PRIORITY CONTENT STANDARDS
Students will know...

Standard: BB1: Students will analyze the core concepts of technology.

Standard: ENG1: Students will analyze and demonstrate the attributes of design.

Standard: ENG3: Students will demonstrate and analyze the role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.
Standard: ICT1: Students will analyze, select and use information and communication technologies.
Standard: MNF1: Students will be able to select and use manufacturing technologies.

Potential INDUSTRY-RECOGNIZED CREDENTIALS (IRCs) Opportunties associated with the course	Potential WORK BASED LEARNING (WBL) opportunities associated with the course
Potential DUAL CREDIT Opportunties associated with the course	

Unit 1 Measuring Systems		
STAGE 1: Desired Unit Results *What will students understand as a result of the unit?*		**STAGE 2: Assessment Evidence** *By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?*
ESSENTIAL QUESTION (s) *What thought-provoking questions will foster inquiry, understanding, and transfer of learning?*		**Success Criteria with Standards** *The criteria for evaluating performance on standards is constant.*
		CTE standards-based Rubric: Throughout course, students and teachers use rubric for communication of success criteria, reflection, goal setting, and feedback. Students continually reflect on and discuss essential questions in their notebook and orally in class.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Creativity, Critical Thinking, Communication and Collaboration **4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.**		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem.	*Students will demonstrate their skills learned in class through a series of drawings and presentations to be evaluated by a rubric*
	4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative.	
	4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.	
	C2.a.16.h: I can defend an action taken or a decision implemented.	
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.	*Students will demonstrate their critical thinking skills learned in class through a series of drawings and presentations to be evaluated by a rubric*
	4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	
Career Development **CD4: Students will identify and apply employability skills.**		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.6.h: I can evaluate how selfdiscipline, self-worth, positive attitude and integrity displayed in a work situation affect employment status.	*Students will demonstrate their critical thinking skills learned in class through a series of drawings and presentations to be evaluated by a rubric*
	CD4.a.7.h: I can assess how flexibility and willingness to learn new knowledge and skills affect employment status.	
	CD4.a.8.h: I can apply communication strategies when adapting to a culturally diverse environment.	
	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	
	CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.	
b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.	CD4.b.7.h: I can employ critical thinking and decision-making skills to exhibit qualifications to a potential employer in an interview.	
c: I identify and exhibit traits for retaining employment.	CD4.c.5.h: I can maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite.	

Information, Media, Technology **IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.**		
c: I select relevant information necessary for making decisions and solving problems	IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation.	*Students will demonstrate their critical thinking skills learned in class through a series of drawings and presentations to be evaluated by a rubric*
d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.6.h: I can defend a proposal for a new product or service based on data and information analysis.	
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: BB1: Students will analyze the core concepts of technology.	*BB1.b.5.h: I can select appropriate resources and explain how trade-offs between competing values, such as availability, cost, desirability and waste influenced their decision.*	
Standard: MNF1: Students will be able to select and use manufacturing technologies.	*MNF1.a.9.h: I can select and apply the appropriate units and scales for situations involving measurement.*	
Stage 3: Learning Activities *A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?*		
GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	**STRATEGIES/ACTIVITIES** *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	**RESOURCES/MATERIALS** *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*
What is the appropriate unit of measurement?	Pretest, Practice, Post Test, and observation	Tape measure, Ruler, architectural scale
What is the appropriate tool needed to measure?		Chromebook
What are the parts of a ruler?		Internet Access
How does a tape measure work?		

<table>
<tr><th colspan="3">Unit 2 Planning and Design</th></tr>
<tr><th colspan="2">STAGE 1: Desired Unit Results
What will students understand as a result of the unit?</th><th>STAGE 2: Assessment Evidence
By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?</th></tr>
<tr><td colspan="2">ESSENTIAL QUESTION (s)
What thought-provoking questions will foster inquiry, understanding, and transfer of learning?</td><td>Success Criteria with Standards
The criteria for evaluating performance on standards is constant.</td></tr>
<tr><td colspan="2">Why is communication and collaboration important? How do positive work behaviors and personal qualities impact communication and collaboration?</td><td>CTE standards-based Rubric: Throughout course, students and teachers use rubric for communication of success criteria, reflection, goal setting, and feedback.

Students continually reflect on and discuss essential questions in their notebook and orally in class.</td></tr>
<tr><td colspan="2">PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets</td><td>Performance Tasks Options/ Assessment Strategies by Standard
Students may be given options to show their learning in varied ways.</td></tr>
<tr><td colspan="2">Creativity, Critical Thinking, Communication and Collaboration
4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.</td><td></td></tr>
<tr><td>a: I develop effective resolutions for a given problem, decision or opportunity using available information.</td><td>4C2.a.11.h: I can determine the information needed to address an identified problem.</td><td>writing procedures, creating Bill of Materials, sketching/designing Layouts</td></tr>
<tr><td></td><td>4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation.</td><td rowspan="4">Students will demonstrate their critical thinking skills learned in class through a series of drawings and presentations to be evaluated by a rubric</td></tr>
<tr><td></td><td>4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.</td></tr>
<tr><td>b: I develop and implement a resolution for a new situation using personal knowledge and experience.</td><td>4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.</td></tr>
<tr><td></td><td>4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.</td></tr>
<tr><td colspan="2">Career Development
CD4: Students will identify and apply employability skills.</td><td></td></tr>
<tr><td>a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.</td><td>CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.</td><td rowspan="4">Students will demonstrate their critical thinking skills learned in class through a series of drawings and presentations to be evaluated by a rubric</td></tr>
<tr><td></td><td>CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.</td></tr>
<tr><td>c: I identify and exhibit traits for retaining employment.</td><td>CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.</td></tr>
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IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.</td><td></td></tr>
<tr><td>c: I select relevant information necessary for making decisions and solving problems</td><td>IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation.</td><td>Students will demonstrate their critical thinking skills learned in class through a series of drawings and presentations to be evaluated by a</td></tr>
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PRIORITY CONTENT STANDARDS & Learning Targets		Performance Tasks Options/ Assessment Strategies by Standard *Students may be given options to show their learning in varied ways.*
Standard: ENG1: Students will analyze and demonstrate the attributes of design.	**ENG1.a.12.h:** Requirements of a design, such as criteria, constraints and efficiency, sometimes compete with each other.	Students will demonstrate their skills learned in class by writing procedures, creating Bill of Materials, sketching/designing Layouts.
Standard: ENG3: Students will demonstrate and analyze the role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.	**ENG3.a.5.h:** I can explain technological problems must be researched before they can be solved.	
Standard: ICT1: Students will analyze, select and use information and communication technologies.	**ICT1.c.9.h:** I can generate an authentic graphic Communication example.	
Standard: MNF1: Students will be able to select and use manufacturing technologies.	**MNF1.a.9.h:** I can select and apply the appropriate units and scales for situations involving measurement.	
SUPPORTING STANDARDS AND LEARNING TARGETS		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: AC1: Students will be able to select and use architecture and construction technologies.	**AC1.b.12.h:** I can calculate required materials for residential construction applications.	Students will demonstrate their skills learned in class by writing procedures, creating Bill of Materials, sketching/designing Layouts.
	AC1.b.14.h: I can apply conventional construction measurement processes accurately (i.e., geometric and trigonometric functions).	

Stage 3: Learning Activities

A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?

GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	STRATEGIES/ACTIVITIES *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	RESOURCES/MATERIALS *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*
how can planning help in the creation and design of manufactured items	calculate material costs and project costs - Bill of Materials	Rulers, Scales and tape measures
how is the design proces used as a communication tool	Design parts and create sketches of exisiting parts/projects	Spreadsheets
What drawings are included in a building construction project and why?	create a procedure for work	Internet
What information can be displayed in a building construction project and how can you read them?	daily journal or log to record work completed	Graph paper
		Other classroom supplies

<table>
<tr><th colspan="3">Unit 3 Employability/Safety</th></tr>
<tr><th colspan="2">STAGE 1: Desired Unit Results
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By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?</th></tr>
<tr><td colspan="2">ESSENTIAL QUESTION (s)
What thought-provoking questions will foster inquiry, understanding, and transfer of learning?</td><td>Success Criteria with Standards
The criteria for evaluating performance on standards is constant.</td></tr>
<tr><td colspan="2">How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?</td><td rowspan="2">CTE standards-based Rubric: Throughout course, students and teachers use rubric for communication of success criteria, reflection, goal setting, and feedback.

Students continually reflect on and discuss essential questions in their notebook and orally in class.</td></tr>
<tr><td colspan="2">What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?</td></tr>
<tr><td colspan="2">PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets</td><td>Performance Tasks Options/ Assessment Strategies by Standard
Students may be given options to show their learning in varied ways.</td></tr>
<tr><td colspan="2">Creativity, Critical Thinking, Communication and Collaboration
4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.</td><td>Successful completion of safety test, Safe return demonstration of all tools and equipment, and continuous demonstration of safe practices and uses of tools and equipment</td></tr>
<tr><td>a: I develop effective resolutions for a given problem, decision or opportunity using available information.</td><td>4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative.</td><td rowspan="2">CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.</td></tr>
<tr><td>b: I develop and implement a resolution for a new situation using personal knowledge and experience.</td><td>4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.</td></tr>
<tr><td colspan="2">Career Development
CD4: Students will identify and apply employability skills.</td><td></td></tr>
<tr><td rowspan="2">a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.</td><td>CD4.a.9.h: I can use positive work qualities typically desired in each of the career cluster's pathways.</td><td rowspan="4">CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback.</td></tr>
<tr><td>CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.</td></tr>
<tr><td rowspan="2">c: I identify and exhibit traits for retaining employment.</td><td>CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.</td></tr>
<tr><td>CD4.c.5.h: I can maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite.</td></tr>
<tr><td colspan="2">PRIORITY CONTENT STANDARDS & Learning Targets</td><td>Performance Tasks Options/ Assessment Strategies by Standard
Students may be given options to show their learning in varied ways.</td></tr>
<tr><td rowspan="2">Standard: MNF1: Students will be able to select and use manufacturing technologies.</td><td>MNF1.a.7.h: I can identify safety and health protections and procedures that are critical to worker well-being.</td><td rowspan="2">Students will demonstrate knowledge in appropriate machine vocabulary, machines safety, and choosing the right tools for the job.</td></tr>
<tr><td>MNF1.a.8.h: I can use appropriate tools, materials, and machines to repair a malfunctioning system.</td></tr>
<tr><td colspan="2">SUPPORTING STANDARDS AND LEARNING TARGETS</td><td>Performance Tasks Options/ Assessment Strategies by Standard
Students may be given options to show their learning in varied ways.</td></tr>
<tr><td>enter supporting standards here, add more rows as needed</td><td>enter learning targets, add more rows as needed</td><td></td></tr>
</table>

Stage 3: Learning Activities *A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?*		
GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	STRATEGIES/ACTIVITIES *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	RESOURCES/MATERIALS *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*
anayze what kinds of skills are valuable to employers	paricipate in safety readings, demonstrations	various supplies, tools and equipment used in building construction trades
demonstrate work skills desired by future employers	students will reflect on their employability skills and class safety	
how does safety relate to a work enviroment	perform maintenance on equipment, tools and supplies	
The importance of and how to maintain and organize equipment and tools	Organize equipment tools and supplies	

Unit 4 Residential Framing		
STAGE 1: Desired Unit Results *What will students understand as a result of the unit?*		**STAGE 2: Assessment Evidence** *By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?*
ESSENTIAL QUESTION (s) *What thought-provoking questions will foster inquiry, understanding, and transfer of learning?*		**Success Criteria with Standards** *The criteria for evaluating performance on standards is constant.*
How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings?		CTE standards-based Rubric: Throughout course, students and teachers use rubric for communication of success criteria, reflection, goal setting, and feedback.
What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now?		Students continually reflect on and discuss essential questions in their notebook and orally in class.
PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Creativity, Critical Thinking, Communication and Collaboration **4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.**		
a: I develop effective resolutions for a given problem, decision or opportunity using available information.	4C2.a.11.h: I can determine the information needed to address an identified problem.	Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric
	4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation.	
	4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative.	
	4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria.	
b: I develop and implement a resolution for a new situation using personal knowledge and experience.	4C2.b.5.h: I can apply past experience to develop a course of action for a new situation.	
	4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity.	
Career Development **CD4: Students will identify and apply employability skills.**		
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.	CD4.a.6.h: I can evaluate how selfdiscipline, self-worth, positive attitude and integrity displayed in a work situation affect employment status.	Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric
	CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways.	
	CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.	
b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.	CD4.b.7.h: I can employ critical thinking and decision-making skills to exhibit qualifications to a potential employer in an interview.	
c: I identify and exhibit traits for retaining employment.	CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.	

	CD4.c.5.h: I can maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite.	
d: I develop positive relationships with others.	CD4.d.6.h: I can evaluate the best method to assist co-workers in accomplishing goals and tasks.	
Information, Media, Technology **IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.**		
a: I choose appropriate sources of data and information for a given purpose.	IMT1.a.6.h: I can justify the selection of various information sources for a given purpose.	Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric
	IMT1.a.7.h: I can explain the level of objectivity for a given source of information.	
b: I determine the relevance, validity and timeliness of data and information.	IMT1.b.7.h: I can use raw data and information appropriately to support an argument, idea or initiative.	
	IMT1.b.9.h: I can defend a position or decision using relevant, valid and timely data and information.	
c: I select relevant information necessary for making decisions and solving problems	IMT1.c.5.h: I can defend a solution or conclusion using appropriate data and information.	
	IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation.	
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: BB1: Students will analyze the core concepts of technology.	**BB1.b.5.h:** I can select appropriate resources and explain how trade-offs between competing values, such as availability, cost, desirability and waste influenced their decision.	*Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric*
Standard: ENG1: Students will analyze and demonstrate the attributes of design.	*ENG1.a.12.h: Requirements of a design, such as criteria, constraints and efficiency, sometimes compete with each other.*	
Standard: MNF1: Students will be able to select and use manufacturing technologies.	**MNF1.a.7.h:** I can identify safety and health protections and procedures that are critical to worker well-being.	
	MNF1.a.8.h: I can use appropriate tools, materials, and machines to repair a malfunctioning system.	
	MNF1.a.9.h: I can select and apply the appropriate units and scales for situations involving measurement.	
	MNF1.e.8.h: I can use a manufacturing system to produce a product.	
	MNF1.f.7.h: I can recognize servicing keeps products in good operating condition.	
	MNF1.f.8.h: I can recognize technologies provide a means for humans to alter or modify materials and to produce products.	

SUPPORTING STANDARDS AND LEARNING TARGETS		Performance Tasks Options/ Assessment Strategies by Standard *Students may be given options to show their learning in varied ways.*
Standard: AC1: Students will be able to select and use architecture and construction technologies.	**AC1.b.12.h:** I can calculate required materials for residential construction applications.	*Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric*
	AC1.a.13.h: I can explain how structures can include prefabricated materials.	
	AC1.b.14.h: I can apply conventional construction measurement processes accurately (i.e., geometric and trigonometric functions).	
Standard AC1.c: Demonstrate the safe and appropriate use of hand tools common to the residential and commercial construction industry.	**AC1.c.5.h:** I can demonstrate and use the common hand tools of the trade safely and properly.	
	AC1.c.6.h: I can maintain and care for hand tools used in residential and commercial construction.	
Standard AC1.g: Demonstrate the variety of building phases, systems and techniques used in architecture and construction.	**AC1.g.12.h:** I can analyze the phases of residential and commercial construction.	

Stage 3: Learning Activities

A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?

GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	STRATEGIES/ACTIVITIES *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	RESOURCES/MATERIALS *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*
What is the Process of creating a BOM	Create a BOM	4x8 sheets of 1/2" osb
How can you use the BOM to collect materials needed to create the framed wall	Collect supplies needed for framing	Speed Square
What is the process used to layout top and bottom plates	Cut and Layout materials for framing and sheathing	2x4x8 boards
What is the proper layout of studs in a wall	Joint frame together using industry standard joining techniques	miter saw
What is the procedure for jointing the wall parts together	Attach sheathing using industry standard joining techniques	table saw
How can you maximize supplies to minimize waste	checkpoint on residential framing techniques	hammer
What types of framing techiques are there and how do they work		3 1/2" 16 penny nails
What are the advantages and disadvantages of different types of framing techniques		2 1/2" 8 penny nails
What is the history of house framing?		Tape measures
What are different types of house framing?		other assorted tools and equipment
What are different types of supplies and materials are available?		

Why are there so many framing methods?		

<table>
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	IMT1.b.9.h: I can defend a position or decision using relevant, valid and timely data and information.	
c: I select relevant information necessary for making decisions and solving problems	IMT1.c.5.h: I can defend a solution or conclusion using appropriate data and information.	
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PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: BB1: Students will analyze the core concepts of technology.	**BB1.b.5.h:** I can select appropriate resources and explain how trade-offs between competing values, such as availability, cost, desirability and waste influenced their decision.	*Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric*
Standard: ENG1: Students will analyze and demonstrate the attributes of design.	*ENG1.a.12.h: Requirements of a design, such as criteria, constraints and efficiency, sometimes compete with each other.*	
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SUPPORTING STANDARDS AND LEARNING TARGETS		Performance Tasks Options/ Assessment Strategies by Standard *Students may be given options to show their learning in varied ways.*
Standard: AC1: Students will be able to select and use architecture and construction technologies.	**AC1.b.12.h:** I can calculate required materials for residential construction applications.	*Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric*
	AC1.a.13.h: I can explain how structures can include prefabricated materials.	
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Standard AC1.c: Demonstrate the safe and appropriate use of hand tools common to the residential and commercial construction industry.	**AC1.c.5.h:** I can demonstrate and use the common hand tools of the trade safely and properly.	
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Stage 3: Learning Activities

A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?

GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	STRATEGIES/ACTIVITIES *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	RESOURCES/MATERIALS *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*
	Create a BOM	vinyl siding starter strip
How can you use the BOM to collect materials needed to side the wall	Collect supplies needed for siding and trimming	vinyl siding trim
What is the process used to install vinyl siding and trim	Cut and Layout materials for siding	Vinyl siding
How to create a seam in the siding	Attach siding using industry standards	Snips
What types of finishes can be used on the exterior of a residential house?	Install a seam in the siding using industry standard techniques	Roofing or siding Nails
What are the different types of exterior wall finishes?	checkpoint on residential exterior wall finishes	hammer
What factors will be used to choose the most effective exterior wall finish?		Level
		Siding removal tool
		Siding notch punch
		Flat bar
		other assorted tools and equipment

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How does basic plumbing work	Create a BOM	Copper Pipe
What types of materials are used in plumbing	Collect supplies needed for installing the plumbing	PVC Pipe
What types and how are plumbing pipes joined together	Cut and dry fit materials for plumbing	Galvanized Pipe
What are the different systems involved in plumbing a house	Install and connect plumbing using industry standard techniques and materials	Pex Pipe
Why are there building codes for pluming systems within a building?	checkpoint on residential plumbing	Joints to connect pipes
What are some of the building codes for plumbing?		Drill
What are the industry standard tools and materials used in plumbing?		Drill bit
How to identify and understand the difference between supply and DWV lines?		Garden hose connected to water source
What are the industry standards for connecting plumbing for supply and DWV lines?		Hose bib
		PVC on off valve
		2 way on off hose valve
		Pipe Cutter
		Copper Pipe Cutter
		Pex Removal Tool

		Pipe Wrenches and other plumbing tools
		Torch
		Solder
		Flux
		PVC Glue
		PVC Primer
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What types of materials are used in electrical	Collect supplies needed for installing the electrical wiring	Electrical outlet
What types and how are houses wired	Install electrical boxes according to plans	Light switch
What are the different materials and steps in wiring a house	Cut and dry fit materials for electrical	Light fixture
How do switches, outlets and lights get wired	Install Electrical outlets following industry standards	Electrical Boxes
Why are there building codes for electrical systems within a building?	checkpoint on residential wiring	Electrical box for light
What are some of the building codes for electrical?		Drill bit
What are the industry standard tools and materials used in electrical systems?		Drill

How to identify and understand the difference between different types of electrical wire?		Hammer
What are the industry standards for connecting and wiring a house or commercial building?		Flat Bar
		Wire Strippers
		Heavy Pliers
		wiring nut
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4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.</td><td></td></tr>
<tr><td>a: I develop effective resolutions for a given problem, decision or opportunity using available information.</td><td>4C2.a.11.h: I can determine the information needed to address an identified problem.</td><td rowspan="6">Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric</td></tr>
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<tr><td>a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.</td><td>CD4.a.6.h: I can evaluate how selfdiscipline, self-worth, positive attitude and integrity displayed in a work situation affect employment status.</td><td rowspan="5">Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric</td></tr>
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<tr><td></td><td>CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.</td></tr>
<tr><td>b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.</td><td>CD4.b.7.h: I can employ critical thinking and decision-making skills to exhibit qualifications to a potential employer in an interview.</td></tr>
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	CD4.c.5.h: I can maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite.	
d: I develop positive relationships with others.	CD4.d.6.h: I can evaluate the best method to assist co-workers in accomplishing goals and tasks.	
Information, Media, Technology **IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.**		
a: I choose appropriate sources of data and information for a given purpose.	IMT1.a.6.h: I can justify the selection of various information sources for a given purpose.	Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric
	IMT1.a.7.h: I can explain the level of objectivity for a given source of information.	
b: I determine the relevance, validity and timeliness of data and information.	IMT1.b.7.h: I can use raw data and information appropriately to support an argument, idea or initiative.	
	IMT1.b.9.h: I can defend a position or decision using relevant, valid and timely data and information.	
c: I select relevant information necessary for making decisions and solving problems	IMT1.c.5.h: I can defend a solution or conclusion using appropriate data and information.	
	IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation.	
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: BB1: Students will analyze the core concepts of technology.	**BB1.b.5.h:** I can select appropriate resources and explain how trade-offs between competing values, such as availability, cost, desirability and waste influenced their decision.	*Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric*
Standard: ENG1: Students will analyze and demonstrate the attributes of design.	*ENG1.a.12.h: Requirements of a design, such as criteria, constraints and efficiency, sometimes compete with each other.*	
Standard: MNF1: Students will be able to select and use manufacturing technologies.	**MNF1.a.7.h:** I can identify safety and health protections and procedures that are critical to worker well-being.	
	MNF1.a.8.h: I can use appropriate tools, materials, and machines to repair a malfunctioning system.	
	MNF1.a.9.h: I can select and apply the appropriate units and scales for situations involving measurement.	
	MNF1.e.8.h: I can use a manufacturing system to produce a product.	
	MNF1.f.7.h: I can recognize servicing keeps products in good operating condition.	
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SUPPORTING STANDARDS AND LEARNING TARGETS		Performance Tasks Options/ Assessment Strategies by Standard *Students may be given options to show their learning in varied ways.*
Standard: AC1: Students will be able to select and use architecture and construction technologies.	**AC1.b.12.h:** I can calculate required materials for residential construction applications.	*Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using a AT&E safety skills rubric*
	AC1.a.13.h: I can explain how structures can include prefabricated materials.	
	AC1.b.14.h: I can apply conventional construction measurement processes accurately (i.e., geometric and trigonometric functions).	
Standard AC1.c: Demonstrate the safe and appropriate use of hand tools common to the residential and commercial construction industry.	**AC1.c.5.h:** I can demonstrate and use the common hand tools of the trade safely and properly.	
	AC1.c.6.h: I can maintain and care for hand tools used in residential and commercial construction.	
Standard AC1.e: Demonstrate project management procedures and processes as they occur in a construction project.	**AC1.e.13.h:** I can estimate materials from blueprints and specifications.	
	AC1.e.14.h: I can explain the sequencing of events for specific construction projects.	
	AC1.e.15.h: I can solve common residential construction problems such as framing, plumbing and electrical, by using the official codes adopted by the state and local building standards commission.	

Stage 3: Learning Activities

A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?

GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	STRATEGIES/ACTIVITIES *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	RESOURCES/MATERIALS *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*
What types of finishes are there for residential interior walls	Create a BOM	Drywall
What are the pros and cons of those finishes	Collect supplies needed for installing drywall	Drywall multipurpose mud
What are the industry standard tools involved in drywall	cut and hang drywall	drywall tape
What are the industry standard steps involved in installing drywall	tape and mud drywall using industry standard practices	drywall knives
What is one industry standard way to patch a hole in drywall	patch a hole in the drywall using one of the industry standard practices	drywall plunge saw
What are the different choices for interior wall finishes?	checkpoint on interior wall finishes	drywall rasp
What factors should be used in considering the different interior wall finishes?		drywall mud box

What are the industry standard practice for installing Drywall?		utility knife
What are the industry standards practice for patching a hole in drywall?		Hammer
		Flat Bar
		drill and driver bit
		drywall screws
		Other assorted tools and equipment

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Stage 3: Learning Activities

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What types of finishes are there for residential roofs	Create a BOM	composite shingles
What are the pros and cons of those finishes	Collect supplies needed for installing shingles	starter shingles
What are the industry standard tools involved in roofing	install composite shingles using an industry standard process	shingle capping
What are the industry standard steps involved in installing composition shingles	checkpoint on different roofing types	synthetic roofing underlayment
What is one industry standard way of installing capping and sealing a roof		hammer stapler
What are the different choices for roofing?		hammer
What factors would be considered when choosing a roofing system?		staples

What are the industry standard practices for installing a shingle roofing sytsem?		roofing nails
		flat bar
		mock roof set up
		shingle remover
		Utility Knife
		Hook Blade and regular blades
		Other assorted roofing tools and equipment (black Jack and caulk gun)

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CD4: Students will identify and apply employability skills.</td><td></td></tr>
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<tr><td>CD4.a.7.h: I can assess how flexibility and willingness to learn new knowledge and skills affect employment status.</td></tr>
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<tr><td>CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities.</td></tr>
<tr><td rowspan="3">b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.</td><td>CD4.b.5.h: I can use multiple resources to locate job opportunities.</td></tr>
<tr><td>CD4.b.6.h: I can prepare a resume, cover letter, employment application.</td></tr>
<tr><td>CD4.b.7.h: I can employ critical thinking and decision-making skills to exhibit qualifications to a potential employer in an interview.</td></tr>
<tr><td rowspan="3">c: I identify and exhibit traits for retaining employment.</td><td>CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability.</td></tr>
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<tr><td>CD4.c.6.h: I can complete required employment forms and documentation.</td></tr>
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	CD4.c.7.h: I can summarize key activities necessary to retain a job in an industry.	
d: I develop positive relationships with others.	CD4.d.7.h: I can examine the skills required to enable students to successfully transition to postsecondary opportunities.	
	CD4.d.8.h: I can use a systematic approach to academic and career planning for students to achieve their learning, socio-cultural and work goals.	
Information, Media, Technology **IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.**		
a: I choose appropriate sources of data and information for a given purpose.	IMT1.a.6.h: I can justify the selection of various information sources for a given purpose.	*Students will use Xello or a similar career exploration website or software to explore and understand different career oportunites in the building trades.*
	IMT1.a.7.h: I can explain the level of objectivity for a given source of information.	
b: I determine the relevance, validity and timeliness of data and information.	IMT1.b.7.h: I can use raw data and information appropriately to support an argument, idea or initiative.	
c: I select relevant information necessary for making decisions and solving problems	IMT1.c.5.h: I can defend a solution or conclusion using appropriate data and information.	
	IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation.	
d: I apply data and information to communicate ideas and create new opportunities.	IMT1.d.6.h: I can defend a proposal for a new product or service based on data and information analysis.	
PRIORITY CONTENT STANDARDS & Learning Targets		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
Standard: BB1: Students will analyze the core concepts of technology.	BB1.a: Analyze and use technological systems.	*Students will use Xello or a similar career exploration website or software to explore and understand different career oportunites in the building trades.*
Standard: ICT1: Students will analyze, select and use information and communication technologies.	ICT1.a: Analyze how communication happens, the different forms of communication and how it affects society.	
SUPPORTING STANDARDS AND LEARNING TARGETS		**Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.*
enter supporting standards here, add more rows as needed	*enter learning targets, add more rows as needed*	
Stage 3: Learning Activities *A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?*		

GUIDING UNIT QUESTIONS *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning*	STRATEGIES/ACTIVITIES *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.*	RESOURCES/MATERIALS *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.*
What careers are associated with building construction?	Career Exploration in the Building Construction Trades	Computer or Chromebook
What are the educational requirements for these careers?	Sample Resume Building	internet access
What skills and experiences should I be getting now and in the future in order to pursue these careers?	Sample Job Application writing	
What gaps do I have in a resume?		
What are the different careers associated with the different building construction units?		
What is the growth or reduction projection within the building trades?		
What would be required beyond high school to persue a career in the building trades?		