

CURRICULUM MAPPING TEMPLATE

Program: 46.0000 Construction Trades – Consolidated 2011

Segment	CTE Segments/Performance Elements	CTE Concepts	Math Concepts	Common Core Math Standards Middle School	Common Core Math Standards High School
	OVERVIEW OF Construction Trades				
1	<p>V. SYSTEMS <i>C. Comply with regulations and applicable codes to establish a legal and safe workplace/jobsite.</i> 2. Identify workplace/jobsite environmental hazards of a given situation.</p>	Walk around job site looking for hazards			
	<p>VI. SAFETY, HEALTH AND ENVIRONMENTAL <i>A. Implement personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.</i> 1. Assess workplace conditions with regard to safety and health. 2. Select appropriate personal protective equipment as needed for a safe workplace/jobsite. 3. Employ a safety hierarchy and communication system within the workplace/jobsite. 4. Implement safety precautions to maintain a safe worksite. 6. Create and apply a jobsite environmental program. 7. Complete OSHA 10 hour (teachers must be OSHA outreach certified) 8. Examine Material Safety Data Sheets (MSDS) and follow the procedures as necessary 9. Describe procedures for the Renovation, Repair, and Painting--Lead Safe Work practices</p>	Discuss safety of jobsites and go through 10 hour training of OSHA...get certification			

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	<p><i>B. Complete work tasks in accordance with employee rights and responsibilities and employers obligations to maintain workplace safety and health.</i></p> <ol style="list-style-type: none"> 1. Identify rules and laws designed to promote safety and health in the workplace. 2. State the rationale of rules and laws designed to promote safety and health. <p><i>C. Employ emergency procedures as necessary to provide aid in workplace accidents.</i></p> <ol style="list-style-type: none"> 1. Use knowledge of First Aid procedures as necessary. 2. Use knowledge of CPR procedures as necessary. 3. Use safety equipment as necessary. 	<p>B. Review OSHA/MIOSHA safety procedures</p> <p>C. Review where first aid is located at job site</p>			
2	<p>V. SYSTEMS</p> <p><i>A. Describe the nature and types of business organizations to build an understanding of the scope of organizations.</i></p> <ol style="list-style-type: none"> 1. Describe the types and functions of businesses. 2. Explain the functions and interactions of common departments within a business. <p><i>C. Comply with regulations and applicable codes to establish a legal and safe workplace/jobsite.</i></p> <ol style="list-style-type: none"> 1. Identify governmental regulations and national, state and/or local building codes that apply to a given workplace/jobsite. <p><i>D. Examine how the roles and responsibilities among trades/professions work in relationship to complete a project/job.</i></p> <ol style="list-style-type: none"> 1. Describe how relationships between trades/professions can facilitate smooth workflow and outcome to meet project goals. <p><i>E. Examine all factors effecting the project and the planning process.</i></p> <ol style="list-style-type: none"> 1. Understand social, environmental and political factors that affect the project. 	<p>A. Speak of running a small construction business. Working with other contractors and suppliers.</p> <p>C. Go over local codes and have inspector talk to class.</p> <p>D. Show how different trades go hand in hand.</p> <p>E. How the economy affects the business.</p>			

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	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT <i>B. Explore, plan, and effectively manage careers.</i></p> <p>2. Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster.</p> <p>3. Recognize and act upon requirements for career advancement to plan for continuing education and training.</p> <p>5. Examine licensing, certification and credentialing requirements at the national, state and local levels to maintain compliance with industry requirements.</p> <p>6. Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning.</p> <p>X. TECHNICAL SKILLS <i>O. Specialty Skills in Residential Construction</i></p> <p>1. Understand roles and responsibilities of various craftspeople</p> <p><i>P. Business Fundamentals</i></p> <p>3. Identify permits and licenses required during residential construction projects</p>	<p>B. Bring in post-secondary schools, union and local businesses looking for employees into class.</p> <p>X. Go through requirements for building permit and licensing.</p>	<p>B. Charts and Tables (2) Whole Numbers (2) Decimals (2)</p>	<p>6.NS.2; 6.NS.3; 6.NS.5; 7.NS.1; 7.NS.2; 7.NS.3; 7.EE.3; 6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>
3	<p>I. ACADEMIC FOUNDATIONS <i>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</i></p> <p>1. Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.</p> <p>7. Interpret verbal and nonverbal cues/behaviors to enhance communication with co-workers and clients/participants.</p>				

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	<p>II. COMMUNICATIONS</p> <p><i>A. Develop and interpret tables, charts, and figures to support written and oral communications.</i></p> <p>2. Interpret tables, charts, and figures used to support written and oral communication.</p> <p><i>B. Apply active listening skills to obtain and clarify information.</i></p> <p>1. Interpret a given verbal message/information.</p> <p>2. Respond with restatement and clarification techniques to clarify information.</p> <p>3. Model behaviors that demonstrate active listening.</p> <p><i>C. Listen to and speak with diverse individuals to enhance communication skills.</i></p> <p>1. Apply factors and strategies for communicating with a diverse workforce.</p> <p>2. Demonstrate ability to communicate and resolve conflicts within a diverse workforce.</p> <p><i>D. Exhibit public relations skills to increase internal and external customer/client satisfaction.</i></p> <p>2. Use correct grammar to communicate verbally.</p> <p>3. Listen to a presentation and record important information. Report back identifying central themes and use key points to explain how the message applies to a similar situation.</p>	<p>Mock training for interview situations. Pave your Path day.</p>	<p>A2. Tables and Charts (1)</p>	<p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4</p>	<p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1</p>
	<p>III. PROBLEM-SOLVING AND CRITICAL THINKING</p> <p><i>A. Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.</i></p> <p>1. Employ critical thinking skills independently and in teams to solve problems and make decisions (e.g., analyze, synthesize and evaluate).</p> <p>2. Employ critical thinking and interpersonal skills to resolve conflicts with staff and/or customers.</p> <p>3. Identify, write and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability.</p>	<p>IIIA. Give examples of estimating projects for cost and materials. Work on a project, allow them to make mistakes and learn from them.</p>	<p>IIIA. Whole numbers (1)</p> <p>Decimals (1)</p> <p>Customary Measuring – Area, perimeter, linear (1)</p> <p>Percents-compute (1)</p>	<p>6.NS.2; 6.NS.3; 6.NS.5; 7.NS.1; 7.NS.2; 7.NS.3; 6.RP.3; 7.RP.1; 6.G.1; 6.G.2; 6.G.3; 7.G.1; 7.G.4; 7.G.6; 6.RP.2; 6.RP.3; 7.EE.2; 7.EE.3</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.GPE.7; G.MG.2</p>

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	<p>4. Conduct technical research to gather information necessary for decision-making.</p> <p>5. Create and implement project plans considering available resources and requirements of a project/problem to accomplish realistic planning in design and construction situations.</p> <p>6. Evaluate and adjust design and construction project plans and schedules to respond to unexpected events and conditions.</p>				
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p><i>B. Employ technological tools to expedite workflow.</i></p> <p>1. Use information technology tools to manage and perform work responsibilities.</p> <p><i>C. Operate electronic mail applications to communicate within a workplace.</i></p> <p>1. Use email to share files and documents.</p> <p>2. Identify the functions and purpose of email systems.</p> <p>3. Use email to communicate within and across organizations.</p> <p><i>D. Operate Internet applications to perform workplace tasks.</i></p> <p>1. Access and navigate Internet (e.g., use a web browser).</p> <p>2. Search for information and resources.</p> <p>3. Evaluate Internet resources for reliability and validity.</p> <p><i>J. Employ computer operations applications to manage work tasks.</i></p> <p>1. Manage computer operations.</p> <p>2. Manage file storage.</p> <p>3. Compress or alter files.</p> <p><i>K. Use computer-based equipment (containing embedded computers or processors) to control devices.</i></p> <p>1. Operate computer driven equipment and machines.</p> <p>2. Use installation and operation manuals.</p> <p>3. Troubleshoot computer driven equipment and machines.</p> <p>4. Access support as needed to maintain operation of computer driven equipment and machines.</p>				

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	<p><i>L. Demonstrate Digital Citizenship</i></p> <ol style="list-style-type: none"> 1. Identify legal and ethical issues related to the use of information and communication technologies (e.g., properly selecting and citing resources) 2. Discuss possible long-range effects of unethical uses of technology (e.g., virus spreading, file pirating, hacking) on cultures and society 3. Discuss and demonstrate proper netiquette in online communications 4. Identify ways that individuals can protect their technology systems from unethical or unscrupulous users 5. Create appropriate citations for resources when presenting research findings 6. Discuss and adhere to fair use policies and copyright guidelines 	Cover in school rules and regulations.			
	<p>VII. LEADERSHIP AND TEAMWORK</p> <p><i>A. Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.</i></p> <ol style="list-style-type: none"> 1. Employ leadership skills to accomplish organizational goals and objectives. 3. Employ teamwork skills to achieve collective goals and use team members' talents effectively. 4. Establish and maintain effective working relationships with all levels of personnel and other departments in order to accomplish objectives and tasks. 	A. Break class into groups with a leader in each.			
	<p>VIII. ETHICS AND LEGAL RESPONSIBILITIES</p> <p><i>A. Know and understand the importance of professional ethics and legal responsibilities.</i></p> <ol style="list-style-type: none"> 1. Apply ethical reasoning to a variety of workplace situations in order to make ethical decisions. 2. Interpret and explain written organizational policies and procedures to help employees perform their jobs according to employer rules and expectations. 	A. Explain school and workplace rules to follow.			

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	<p>IX. EMPLOYABILITY AND CAREER DEVELOPMENT</p> <p>A. Know and understand the importance of employability skills.</p> <ol style="list-style-type: none"> 1. Identify and demonstrate positive work behaviors and personal qualities needed to be employable. 2. Explain written organizational policies, rules and procedures common in design and construction settings to help employees perform their jobs. <p>B. Explore, plan, and effectively manage careers.</p> <ol style="list-style-type: none"> 1. Develop a personal career plan to meet career goals and objectives. 4. Continue professional development to keep current on relevant trends and information within the industry. <p>C. Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.</p> <ol style="list-style-type: none"> 1. Use multiple resources to locate job opportunities. 2. Prepare a résumé. 3. Prepare a letter of application. 4. Complete an employment application. 5. Interview for employment. 6. List the standards and qualifications that must be met in order to enter a given industry. 7. Employ critical thinking and decision-making skills to exhibit qualifications to a potential employer. 8. Maintain a career portfolio to document knowledge, skills and experience in a career field. 9. Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals. 10. Identify and exhibit traits for retaining employment to maintain employment once secured. 	<p>Mock interviews, meeting with professionals to keep updated on the construction industry, guest speakers, create resumes and cover letters</p>			

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	<p>X. TECHNICAL SKILLS <i>B. Employ planning and time management skills and tools to enhance results and complete work tasks.</i> 1. Develop goals and objectives. 2. Prioritize tasks to be completed</p>	Have deadlines and use calendars			
4	<p>I. ACADEMIC FOUNDATIONS <i>C. Demonstrate science knowledge and skills required to pursue the full range of post-secondary and career education opportunities.</i> 4. Identify the physical properties present when using common construction materials in order to use the materials safely, effectively and efficiently. I. TECHNICAL SKILLS <i>H. Material Resources for Construction Activities</i> 1. Identification common materials used in the construction industry 2. Handle, install, position, move, store, and secure materials properly</p>	C. Have at least 3 colleges come in to speak of continuing education in construction. Cover proper handling of materials.			
5	<p>X. TECHNICAL SKILLS <i>D. Use and maintain appropriate tools, machinery, equipment, and resources to accomplish project goals.</i> 1. Select tools, machinery, equipment, and resources that match requirements of the job. 2. Identify sources of information concerning state-of-the-art tools, equipment, materials, technologies and methodologies. 3. Demonstrate use of tools, machinery, equipment and other resources commonly used in design and construction. F. Construction Equipment and Tools 1. Use and maintain common hand tools in the construction industry 2. Use and maintain common portable power tools in the construction industry 3. Use and maintain common stationary power tools used in the construction industry</p>	<p>Covered during tool safety and maintenance.</p> <p>On the job site proper usage of tools and equipment if demonstrated and used.</p>			

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	4. Identify technology tools in the construction industry	Discuss and use new technology tools available, ie, lasers, phone apps, etc.			
6	<p>I. ACADEMIC FOUNDATIONS</p> <p><i>A. Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</i></p> <ol style="list-style-type: none"> 1. Identify whole numbers, decimals, and fractions. 2. Demonstrate knowledge of basic arithmetic operations such as addition, subtraction, multiplication, and division. 3. Demonstrate use of relational expressions such as equal to, not equal, greater than, less than, etc. 4. Apply data and measurements to solve a problem. 5. Analyze Mathematical problem statements for missing and/or irrelevant data. 	Concepts covered on a daily basis.	<p>A. Whole numbers (1)</p> <p>Decimals (1)</p> <p>Fractions (1)</p> <p>Customary Measure (1)</p> <p>Ruler, linear, perimeter, area, volume, weight, temp, time</p>	<p>6.NS.1; 6.EE.2;</p> <p>7.NS.1; 7.NS.2;</p> <p>7.NS.3; 6.NS.2;</p> <p>6.NS.3; 6.NS.5;</p> <p>7.EE.3; 6.RP.3;</p> <p>7.RP.1; 6.G.1;</p> <p>6.G.2; 6.G.3; 7.G.1;</p> <p>7.G.4; 7.G.6; 6.G.2;</p> <p>6.G.3; 7.G.6; 8.G.9;</p> <p>6.EE.2</p>	<p>A.APR.1; A.APR.7;</p> <p>N.RN.3; N.Q.1;</p> <p>G.GPE.7; G.MG.2;</p> <p>G.GMD.1; G.GMD.3</p>
	<p>II. COMMUNICATIONS</p> <p><i>E. Use vocabulary and visual cues commonly used in design and construction to be successful in workplace/jobsite communications.</i></p> <ol style="list-style-type: none"> 2. Utilize vocabulary and visual cues in context of design and construction situations. 				

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	<p>X. TECHNICAL SKILLS <i>C. Read, interpret, and use technical drawings, documents, and specifications to plan a project.</i></p> <ol style="list-style-type: none"> 1. Interpret drawings used in project planning. 2. Describe written standards and that specifications that apply. 3. Recognize how specifications and standards are arranged for proper access. 4. Use architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work. <p><i>G. Building & Construction Design</i></p> <ol style="list-style-type: none"> 1. Demonstrate knowledge of the design of construction projects 2. Interpret Blueprints/Drawings/Specifications used in construction projects 	<p>Interpret drawings for projects.</p> <p>Learning how to read blueprints</p>	<p>C. Ratios (1)</p> <p>Whole Numbers (1)</p> <p>Decimals (1)</p> <p>Using the ruler (1)</p>	<p>6.NS.2; 6.NS.3; 6.NS.5; 7.NS.1; 7.NS.2; 7.NS.3; 6.RP.1; 6.RP.2; 6.RP.3; 7.RP.1; 7.RP.2; 7.RP.3; 7.EE.3</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.MG.3</p>
7	<p>X. TECHNICAL SKILLS <i>G. Building & Construction Design</i></p> <ol style="list-style-type: none"> 3. Describe methods used for site planning in construction projects <p><i>K. Site Preparation for Heavy/Highway & Civil Structures</i></p> <ol style="list-style-type: none"> 1. Describe procedures to carry out grubbing methods (e.g., removal of trees, stumps, plants, and rocks) 2. Identify methods used to perform grading procedures (e.g., altering land surfaces by cutting, filling, and/or smoothing to meet a designated form and function) 3. Define methods used to undertake soil remediation procedures (e.g., protecting and restoring the soil's structure) 4. Describe types and properties of soil 5. Identify underground piping materials and fittings and carry out joining methods for underground pipe 6. Describe methods to install box culverts and catch basins 7. Describe methods to install underground pipe 8. Understand the different colors used for utility marking 9. Know and apply the rules for digging around various utilities 10. Know the procedures to follow if a utility (gas, power, water, etc.) line is hit 	<p>On line teaching through: Video Websites</p>			

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	<p>during digging</p> <p>11. Describe a variety of earthmoving methods including stripping top soil; excavation; transportation of construction materials; placing and backfilling; watering, mixing, spreading, and leveling of materials; and compaction</p> <p>12. Describe soil stabilization methods</p> <p><i>N. Site Preparation for Heavy/Highway & Civil Structures</i></p> <p>4. Describe methods to prepare site for residential construction projects</p>	11. Job site when applicable	11. Area, volume and measuring (3)	6.G.1; 6.G.2; 6.G.3; 7.G.1; 7.G.4; 7.G.6; 8.G.9; 6.EE.2; 6.RP.3; 7.RP.1	G.GPE.7; G.MG.2; G.GMD.1; G.GMD.3
8	<p>II. COMMUNICATIONS</p> <p><i>E. Use vocabulary and visual cues commonly used in design and construction to be successful in workplace/jobsite communications.</i></p> <p>1. Match vocabulary and visual cues to workplace/jobsite situations.</p>	E. Teach students to understand construction lingo.			
	<p>V. SYSTEMS</p> <p><i>E. Examine all factors effecting the project and the planning process.</i></p> <p>2. Understand the context of the projects.</p>	E. Go through all stages of the projects beforehand, from beginning to end			
	<p>X. TECHNICAL SKILLS</p> <p><i>E. Examine building systems and components to evaluate their usefulness to a project.</i></p> <p>1. Identify building systems needed to complete a construction project.</p> <p>2. Identify components of building systems needed to complete a construction project.</p> <p>3. Incorporate appropriate building systems into a construction project.</p>	E. Go through all stages of the projects beforehand, from beginning to end			

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	<p><i>N. Residential Construction</i></p> <p>1. Apply knowledge of specific materials and methods for construction of home components including foundation, walls, roofing, staircases, and flooring (e.g., carpet, tile, stone installation, etc.).</p> <p>2. Understand the distinctions between nonresidential (i.e., stores, offices, factories, etc.) and residential structures (i.e., houses, townhouses, etc.) in terms of building codes, structure formation, building design, materials, etc.</p>	<p>1. Cover all materials and methods for constructing a home.</p> <p>2. Learn about the differences between residential and nonresidential.</p>	<p>1. Whole numbers (1)</p> <p>Decimals (1)</p> <p>Fractions (1)</p> <p>Customary Measure (1)</p> <p>Ruler, linear, perimeter, area, volume, weight, temp, time</p> <p>Geometry: Pythagorean theorem, Angles, Triangles, circles, cylinders</p> <p>Ratios and Proportions</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 6.G.2; 6.G.3; 7.G.4; 8.G.9; 6.EE.2; 6.RP.1; 6.RP.2; 6.RP.3; 7.RP.1; 7.RP.2; 7.RP.3; 7.EE.3; 8.G.6; 8.G.7; 8.G.8; 7.G.5; 7.G.1; 7.G.6; 6.G.1; 8.F.3; 6.G.4; 6.G.6</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.GPE.7; G.MG.2; G.GMD.1; G.GMD.3; G.MG.3; G.SRT.6; G.SRT.8; F.IF.8; G.CO.9; G.CO.12; G.CO.13; G.SRT.5; G.GPE.7; G.CO.5; G.GMD.1; G.MG.1; G.GMD.2; G.GMD.3</p>
9	<p>X. TECHNICAL SKILLS</p> <p><i>N. Residential Construction</i></p> <p>5. Understand the sequencing of events for constructing residential buildings</p> <p>6. Correctly build or install essential home components including, but not limited to foundations, walls, roofs, staircases, flooring, carpets, fixtures, and cabinetry</p>	<p>5&6. Cover all materials and methods for constructing a home.</p>	<p>5&6. Whole numbers (1)</p> <p>Decimals (1)</p> <p>Fractions (1)</p> <p>Customary Measure (1)</p> <p>Ruler, linear, perimeter, area, volume, weight, temp, time</p> <p>Geometry: (1) Pythagorean</p>	<p>6.NS.1; 6.EE.2; 7.NS.1; 7.NS.2; 7.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.EE.3; 6.RP.3; 7.RP.1; 6.G.2; 6.G.3; 8.G.9; 6.EE.2; 6.RP.1; 6.RP.2; 6.RP.3; 7.RP.1; 7.RP.2; 7.RP.3; 7.EE.3; 8.G.6; 8.G.7; 8.G.8; 7.G.5; 7.G.1; 6.G.1; 7.G.4; 8.F.3; 6.G.4; 6.G.6; 7.G.6;</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.GPE.7; G.MG.2; G.GMD.1; G.GMD.3; G.MG.3; G.SRT.6; G.SRT.8; F.IF.8; G.CO.9; G.CO.12; G.CO.13; G.SRT.5; G.GPE.7; G.CO.5; G.GMD.1; G.MG.1; G.GMD.2; G.GMD.3</p>

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			theorem, Angles, Triangles, circles, cylinders Ratios and Proportions (1)	8.G.9	
10	<p>I. ACADEMIC FOUNDATIONS <i>C. Demonstrate science knowledge and skills required to pursue the full range of post-secondary and career education opportunities.</i></p> <ol style="list-style-type: none"> 1. Evaluate scientific constructs including conclusions, conflicting data, controls, data, inferences, limitations, questions, sources of errors, and variables. 2. Apply scientific methods in qualitative and quantitative analysis, data gathering, direct and indirect observation, predictions, and problem identification. <p>X. TECHNICAL SKILLS <i>N. Residential Construction</i></p> <ol style="list-style-type: none"> 3. Understand the terms associated with building science <p><i>Q. Green Building Practices</i></p> <ol style="list-style-type: none"> 1. Describe construction trends related to green building practices 2. Describe methods to select sites for green building practices 3. Perform home energy audits to determine the energy efficiency of a structure 4. Describe methods to minimize construction waste and demolition debris 	<p>C. Science is included in flooring, foundation, and roofing.</p> <p>X.</p> <p>N. Building terms covered in class</p> <p>Q. Covered on line in class</p>	<p>C. Whole Numbers (2) Decimals (2) Percents (2) Ratios (2)</p>	<p>6.NS.2; 6.NS.3; 6.NS.2; 6.NS.3; 6.NS.5; 7.NS.1; 7.NS.2; 7.NS.3; 7.EE.2; 6.RP.1; 6.RP.2; 6.RP.3; 7.RP.1; 7.RP.2; 7.RP.3; 7.EE.3</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.MG.3</p>
11	<p>X. TECHNICAL SKILLS <i>J. Construction of Heavy/Highway & Civil Structures</i></p> <ol style="list-style-type: none"> 1. Demonstrate knowledge of heavy/highway and civil materials and methods in the construction of different types of projects. 2. Demonstrate knowledge of road construction components to perform road marking and road pavement operations 3. Demonstrate knowledge of bridge components and how to construct different types of bridges 	<p>J. Teach through video and guest speakers</p> <p>L. Teach through video and guest speakers</p>			

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	<p>4. Demonstrate knowledge of materials, methods, and techniques in the construction of tunnels, canals, dams, railroads, pipelines, mass-transit facilities, golf courses, and wetlands</p> <p><i>L. Heavy Equipment Operations</i></p> <p>1. Understand the use of rigid frame trucks: dump trucks, asphalt distribution trucks, broom trucks, transit-mix trucks, fuel/lubrication trucks, maintenance trucks, water trucks</p> <p>2. Describe the use the correct type and size of equipment such as: compaction equipment, loaders, backhoe loaders, scrapers, bulldozers, excavators, telescoping excavators, motor graders, skid steer loaders</p> <p>3. Understand the uses of different types of construction cranes and forklifts</p> <p><i>M. Materials & Installation Used in Heavy/Civil Projects</i></p> <p>1. Demonstrate knowledge of concrete properties when performing methods of mixing, curing, and finishing</p> <p>2. Describe installation of structural steel in the construction of bridges, roads, and utilities</p> <p>3. Describe methods to assemble, install, and maintain pipes to carry liquids, steam, compressed air, gases, and fluids needed for processing, manufacturing, heating, and cooling</p> <p>4. Describe operation of concrete paving equipment, including pavers, slip-form pavers, and texture/curing machines</p>	<p>M1. Cover in class with guest speakers, field trip to a concrete plant</p> <p>Also pour and finish concrete on the job site</p>	<p>M1. Whole numbers (1) Decimals (1) Percents (2)</p> <p>Customary Measure (1) Ruler, linear, perimeter, area, volume, weight, temp, time</p>	<p>7.NS.1; 6.NS.2; 6.NS.3; 6.NS.5; 7.NS.1; 7.NS.2; 7.NS.3; 6.RP.2; 6.RP.3; 7.EE.2; 7.EE.3; 6.RP.3; 7.RP.1; 6.G.1; 7.G.1; 7.G.4; 7.G.6; 6.G.2; 6.G.3; 8.G.9; 6.EE.2</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.GPE.7; G.GMD.1; G.GMD.3; G.MG.2</p>
12	<p>I. ACADEMIC FOUNDATIONS</p> <p><i>A. Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</i></p> <p>2. Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace.</p> <p>3. Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants.</p> <p>4. Evaluate and use information resources to accomplish specific occupational tasks.</p> <p>5. Use correct grammar,</p>	<p>A. Reading and writing Wednesdays. Read an industry publication and write a paragraph summary then present to class</p>			

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	<p>punctuation and terminology to write and edit documents.</p> <p>6. Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.</p> <p><i>B. Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities.</i></p> <p>6. Construct charts/tables/graphs from functions and data.</p> <p>7. Analyze data when interpreting operational documents.</p> <p><i>C. Demonstrate science knowledge and skills required to pursue the full range of post-secondary and career education opportunities.</i></p> <p>3. Apply basic concepts of statics and loads to planning.</p>	B. Draw and label foundations and dimensions projects.	B. Whole numbers (2) Charts and tables (2)	6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3; 6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	A.APR.1; A.APR.7; N.RN.3; N.Q.1; S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1
	<p>II. COMMUNICATIONS</p> <p><i>A. Develop and interpret tables, charts, and figures to support written and oral communications.</i></p> <p>1. Create tables, charts, and figures to support written and oral communications.</p> <p><i>D. Exhibit public relations skills to increase internal and external customer/client satisfaction.</i></p> <p>1. Communicate effectively when developing positive customer/client relationships.</p>	A. Write in list form what has to be done and give to each group. Students check off each completed task D. Construction 2 students speak with clients	A. Charts and tables	6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4	S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1
	<p>IV. INFORMATION TECHNOLOGY APPLICATIONS</p> <p><i>A. Use Personal Information Management (PIM) applications to increase workplace efficiency.</i></p> <p>1. Manage personal schedules and contact information.</p> <p>2. Create memos and notes.</p> <p><i>E. Operate writing and publishing applications to prepare business communications.</i></p> <p>1. Prepare simple documents and other business communications.</p> <p>2. Prepare reports and other business communications by integrating graphics and other non-text elements.</p>	A. Keep timelines, use phones for reminders E.			

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	<p>V. SYSTEMS</p> <p><i>B. Implement quality control systems and practices to ensure quality products and services.</i></p> <p>1. Describe quality control standards and practices common to the workplace.</p> <p><i>E. Examine all factors effecting the project and the planning process.</i></p> <p>3. Design and implement submittal approval procedures to ensure effective flow of information in construction process.</p> <p>4. Understand construction subcontracts and manage working relationships on a project.</p> <p>5. Understand and implement testing and inspection procedures to ensure successful completion of the project.</p> <p>6. Understand purpose for scheduling as it relates to successful completion of the project.</p> <p>7. Understand and apply closeout procedures to effectively complete a project.</p> <p>8. Understand risk management and use a variety of strategies and tactics to maintain, increase or decrease risk.</p> <p>9. Understand and apply project turnover procedures to successfully manage construction projects.</p> <p><i>F. Understand and manage union-management relationships and contracts to create a cooperative work environment.</i></p> <p>1. Analyze a proposed contract in terms of the company's position and union's position in labor contract negotiations.</p> <p>2. Assess a situation for compliance with terms of a contract.</p> <p>3. Understand contractual relationships with all parties involved in the building process to ensure successful build of a project.</p> <p>4. Build in accordance with contracts to meet budget and schedule.</p>	<p>F4. Keep up to date with timeline and cost associated with the project</p>	<p>F4. Bar graphs (2) Whole numbers (2)</p>	<p>6.NS.2; 6.NS.3; 7.NS.1; 7.EE.3; 6.SP.4</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1</p>

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	<p>VI. SAFETY, HEALTH AND ENVIRONMENTAL <i>A. Implement personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.</i> 5. Understand and apply procedures for jobsite security to prevent liability. <i>D. Employ knowledge of response techniques to create a disaster and/or emergency response plan.</i> 1. Complete an assessment of an emergency and/or disaster situation. 2. Create an emergency and/or disaster plan.</p>	<p>Covered under OSHO/MIOSHA and school policies for disaster plans</p>			
	<p>VII. LEADERSHIP AND TEAMWORK <i>A. Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.</i> 2. Employ organizational and staff development skills to foster positive working relationships and accomplish organizational goals. 5. Conduct and participate in meetings to accomplish work tasks. 6. Employ mentoring skills to inspire and teach others. 7. Manage relationships with internal and external parties to successfully complete construction projects.</p>	<p>A. Students have a weekly breakfast with local contractors and construction businesses. A foreman of the group makes sure everything gets done and is cleaned up for safety reasons.</p>			
	<p>VIII. ETHICS AND LEGAL RESPONSIBILITIES <i>A. Know and understand the importance of professional ethics and legal responsibilities.</i> 3. Read regulations and contracts to ensure ethical and safety elements are observed. 4. Use ethical and legal standards to avoid conflicts of interest in a design and/or construction setting. 5. Understand proper changeover procedures for successful completion of the project.</p>	<p>We follow building codes and have work inspected by professionals.</p>			

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	<p>X. TECHNICAL SKILLS</p> <p>A. Employ information management techniques and strategies in the workplace to assist in decision-making.</p> <ol style="list-style-type: none"> 1. Use information literacy skills when accessing, evaluating and disseminating information. 2. Describe the nature and scope of information management. 3. Maintain records to facilitate ongoing business operations. 	<p>A. Students verify the billing from suppliers to make sure what was ordered was delivered.</p>			
	<p>B. Employ planning and time management skills and tools to enhance results and complete work tasks.</p> <ol style="list-style-type: none"> 3. Develop timelines using time management knowledge and skills. 4. Use project-management skills to improve workflow and minimize costs. <p>I. Regulations & Quality Assurance</p> <ol style="list-style-type: none"> 1. Identify and comply with governmental regulations, local and state building codes, contract provisions, and construction standards 2. Describe methods used to manage liability on a construction site 3. Describe quality assurance methods used to complete construction projects 4. Describe environmental impact mitigation <p>O. Specialty Skills in Residential Construction</p> <ol style="list-style-type: none"> 2. Describe methods used to facilitate smooth workflow by recognizing relationships between trades/professions <p>P. Business Fundamentals</p> <ol style="list-style-type: none"> 1. Apply knowledge of business and management principles involved in residential construction. 2. Describe common contracts and budgets used in construction projects 4. Analyze blueprints and other documentation to prepare time, cost, materials, and labor estimates 	<p>B. Compute the benefits of efficient time usage and minimizing costs for the finishing of a project.</p> <p>I. Following local codes and inspections by state official.</p> <p>P4. Local lumber company estimator analyze blueprints and scheduling of a project.</p>	<p>B. Whole numbers (1)</p> <p>Decimals (2)</p> <p>I. Whole numbers (1)</p> <p>Decimals (1)</p> <p>P4. Charts and tables (2)</p> <p>Algebra-substituting data into formulas (2)</p> <p>Whole numbers (2)</p> <p>Decimals (2)</p> <p>Customary Measure: (2)</p>	<p>6.NS.2; 6.NS.3; 7.NS.5; 6.NS.5; 7.NS.1; 7.NS.2; 7.NS.3; 7.EE.3</p> <p>6.EE.2; 6.EE.3; 6.SP.4; 6.SP.5; 7.SP.2; 7.SP.3; 7.SP.4; 8.SP.3; 8.SP.4; 6.EE.2; 6.NS.2; 6.NS.3; 7.NS.5; 6.NS.5; 7.NS.1; 7.NS.2; 7.NS.3; 7.EE.3; 6.RP.3; 7.RP.1; 6.G.1; 6.G.2; 6.G.3;</p>	<p>A.APR.1; A.APR.7; N.RN.3; N.Q.1</p> <p>S.IC.1; S.IC.2; S.IC.3; S.IC.4; S.IC.5; S.IC.6; S.ID.1; A.CED.4; A.APR.1; A.APR.7; N.RN.3; N.Q.1; G.GPE.7; G.MG.2</p>

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			Ruler, linear, perimeter, area	7.G.1; 7.G.4; 7.G.6	