

Construction Technology Scope and Sequence Roseville High School

Course Name: Construction Technology 2

CA CTE Pathway: Building Trades and Construction Careers: Residential and Commercial Construction

Course Description: This course is designed to meet the standards for Career and Technical Education; Building Trades and Construction Pathway, as adopted by the California Board of Education. This class will introduce the students to the basic skills of the construction industry with an emphasis on residential construction. Additionally, the class will introduce students to the opportunities that exist in the building trades, including, but not limited too: 2 and 4 year colleges, universities, and trade schools; apprenticeship programs, both closed and open shop; entry level positions in the private and public sector; and the Regional Occupation Program (ROP).

Construction Technology 2 is a co-requisite with CP Geometry as part of the RHS Geometry in Construction Program. Students will learn, practice and perfect skills in a combination classroom lectures, demonstration, and job site experience. Students will demonstrate proficiency and understanding of learned skills through the completion of both models and a large scale factory built home. Work will proceed on a strict timeline. Students will learn job site safety and demonstrate the ability to safely operate hand and power tools common to the trade. Learned skills will include, but are not limited to: Team building and communication, both verbal and written; planning and scheduling; print reading and cost estimation; quality control; understanding of uniform building codes; building of residential systems including walls, floors, trusses, sheeting, plumbing, electrical and finish work.

<u>Standard</u>	<u>Instructional Activity</u>	<u>Assessment</u>	<u>Evidence</u>
<p>D 1.0 Students understand and apply measurement systems in the planning and layout process used in the residential construction industry:</p> <p>D1.1 Identify design solutions for residential construction problems.</p> <p>D1.2 Calculate required materials for residential construction applications.</p> <p>D1.3 Convert scaled blueprint drawing measurements to full dimensions for a given construction project.</p> <p>D1.4 Apply conventional construction</p>	<p>Given a set of blueprints and needed materials; students will construct a balsa wood model of a residential dwelling to scale.</p>	<p>Summative: Classroom work under instructors visual observation and supervision</p> <p>Formative: Assessment and grade assignment of completed house</p>	<p>Appendix E</p>

<p>measurement processes accurately (geometric and trigonometric functions).</p> <p>D1.5 Know the use of conventional construction formulas to determine production</p>			
<p>D2.0 Students understand the safe and appropriate use of hand tools common to the residential and commercial construction industry:</p> <p>D2.1 Use the common hand tools of the trade, such as hammers, pliers, wire cutters, pipe cutters, saws, chisels, and wrenches, safely and properly.</p> <p>D2.2 Maintain and care for hand tools used in residential and commercial construction.</p>	<p>Given the materials and safety training needed; students will complete the step building activity</p> <p>Over the course of the school year, students will actively participate in the completion of a factory built residential structure; safely demonstrating the proper use of hand tools common to the industry.</p>	<p>Summative: Jobsite work under instructors visual observation and supervision</p> <p>Formative: RHS Safety Test; Section VI Instructor grading with student groups</p>	<p>Appendix E</p> <p>Appendix E</p>
<p>D3.0 Students understand the safe and appropriate use of portable power tools that are common to the residential construction industry and are appropriate to the individual student's level:</p> <p>D3.1 Use portable power tools, such as circular saws, table saws, saber saws, drills, planers, and sanders, safely and properly.</p> <p>D3.2 Use portable pneumatic tools, such as, interior finishing and brad nail guns, hammers, impact wrenches, drills, and compressors, safely and appropriately.</p> <p>D3.3 Maintain and care for portable power tools and portable pneumatic tools.</p>	<p>Over the course of the school year, students will actively participate in the completion of a factory built residential structure; safely demonstrating the proper use of power tools common to the industry.</p>	<p>Summative: Jobsite work under instructors visual observation and supervision</p> <p>Formative: RHS Safety Test Student Group Job Cards</p>	<p>Appendix E</p> <p>Appendix E</p>
<p>D4.0 Students understand project management procedures and processes as they occur in a construction project:</p> <p>D4.1 Interpret and use residential construction blueprints and specifications.</p>	<p>Students will complete the Construction Critical Path Timeline exercise in collaborative groups</p>	<p>Summative: Classroom work under instructors visual observation and supervision</p> <p>Classroom discussion</p>	

<p>D4.2 Understand how to estimate materials from blueprints and specifications.</p> <p>D4.3 Understand the sequencing of events for specific construction projects.</p> <p>D4.4 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.</p> <p>D4.6 Understand customer service/relations as applied to project management and wholesale and retail sales.</p>			
<p>D5.0 Students understand the value and necessity of practicing occupational safety in the construction industry facility and job site:</p> <p>D5.1 Understand the safe use of electrical connection methods and electrical wiring procedures.</p> <p>D5.2 Know the safety procedures and practices in various work environment settings pertaining to residential and commercial construction.</p>	<p>Over the course of the school year, students will actively participate in the completion of a factory built residential structure; safely demonstrating the proper use of hand, power tools, equipment and materials, common to the industry.</p>	<p>Summative: Jobsite work under instructors visual observation and supervision</p> <p>Formative: RHS Safety Test</p>	<p>Appendix E</p>
<p>D6.0 Students understand the variety of building phases, systems, and techniques used in residential and commercial construction:</p> <p>D6.1 Develop building plans and schedules by using processes common to residential and commercial construction.</p> <p>D6.2 Understand the processes and materials (e.g., structural, electrical, mechanical, finish) appropriate to the architectural design and residential construction.</p> <p>D6.4 Understand the phases of residential and commercial construction.</p>	<p>Given a set of plans and the proper tools, students working in small, collaborative groups will complete the framing of a wall section that will be part of the factory built house being completed by the program.</p>	<p>Summative: Jobsite work under instructors visual observation and supervision</p> <p>Formative: Student Group Job Cards Instructor grading with student groups</p>	<p>Appendix E</p>

<p>D7.0 Students understand the impact of financial, technical, environmental, and labor trends on the past and future of the construction industry:</p> <p>D7.1 Understand significant historical trends in the construction industry.</p> <p>D7.3 Understand the environmental regulations that influence residential and commercial design., including financial, leadership, and advancement elements.</p>	<p>Classroom lecture on “History of Architecture” PowerPoint</p>	<p>Summative: Classroom discussion</p>	