

Course Title:	Practical Home Repair
Grade(s):	9-12

Course Description
Practical Home Repair is a hands-on Career & Technical Education (CTE) course designed to teach students foundational skills for maintaining and improving a home environment. Students learn how everyday household systems work, how to troubleshoot common problems, and how to safely use essential tools. Topics include window and door hardware, basic framing, wall repair, plumbing and electrical fundamentals, airflow and weatherization, and home safety. Students complete real-world projects such as replacing window screens, installing door hardware, repairing drywall, framing small structures, electrical wiring and circuits and installation of flooring. The course emphasizes problem-solving, safety, tool competency, accurate measurement, and independence with practical repairs that students will encounter throughout life.
Approved Curricular Materials/Textbook(s)
Teacher-curated materials aligned to Connecticut CTE Standards OSHA/CT Department of Labor safety guidelines Project handouts and slideshows Videos and technical sheets embedded in Google Classroom

Unit Title	Unit Description (Include Unit Objectives)	Unit Pacing
Unit 1: Systems of a Home/Floor Plan	Students learn the major systems that make a house function, including HVAC, plumbing, and electrical, and identify where these systems are located within a floor plan. They use introductory drafting tools to create simple floor plans and develop spatial awareness and blueprint-reading skills. Objectives: Identify key home systems (HVAC, plumbing, electrical) and describe their functions.	2 weeks

	• Use CAD software to design, interpret, and modify simple floor plans. • Apply spatial awareness to plan efficient layouts within a structure. • Recognize standard architectural symbols and blueprint conventions.	
Unit 2: Framing: Balsa Wood Structural Models	Students learn the fundamentals of structural framing through scaled model building. Using balsa wood, they construct wall and roof truss systems that replicate real-world framing techniques. Objectives: • Understand basic framing concepts, including walls, studs, joists, and trusses. • Construct scaled framing models using balsa wood materials. • Measure, cut, and assemble components with precision. • Explain material properties and why specific woods are used in construction.	3 weeks
Unit 3: Doors & Windows: Installation and Repair	Students practice real-world repair skills by installing a working door knob assembly and replacing a window screen. Emphasis is placed on proper alignment, tool safety, troubleshooting, and fastener selection. Objectives: • Identify the components of a door knob assembly (latch, strike plate, handle). • Understand window screen frame structure and repair methods. • Select appropriate screws and fasteners for specific repairs. • Install a functional door knob with correct alignment. • Replace a damaged window screen with a secure, accurate fit. • Troubleshoot common issues such as sticking knobs or loose screens. • Apply precise measurement to ensure part compatibility. • Demonstrate safe and professional tool-handling skills.	2 weeks

Unit 4: Drywall: Installation, Damage, & Repair	Students construct a small 2x4 frame and attach drywall sheets, then learn patching and repair methods. They practice cutting drywall, securing it, adding corner bead, and finishing surfaces. Objectives: • Install drywall onto a frame using screws or nails. • Prepare surfaces for finishing and understand feathering techniques. • Create, patch, and repair different types of drywall damage. • Use safety procedures when cutting drywall and handling sharp tools.	3 weeks
Unit 5: Flooring: Tile Trivet (Tile Coaster Project)	Students learn introductory tiling skills through a small-scale trivet (tile coaster) project. They practice tile cutting, adhesive use, grout application, and surface finishing. Objectives: • Cut and align tiles using proper techniques. • Apply adhesives and grout effectively. • Plan tile layouts and patterns using basic design principles. • Use tile tools such as cutters and grout floats safely and accurately.	3 weeks
Unit 6: Electrical Systems: Switches, Circuits, & Lighting	Students gain introductory electrical knowledge by wiring two-way and three-way switch circuits and connecting multiple lamp circuits. All electrical work is completed on de-energized practice boards following safety standards. Objectives: • Understand the principles of electrical circuits and current flow. • Wire functioning 2-way and 3-way switch circuits. • Set up and troubleshoot multiple lamp circuits. • Follow electrical safety practices, including grounding and breaker awareness.	3 weeks

Unit 7: Plumbing: PEX, P-Traps, & Copper Soldering	Students learn core residential plumbing skills through hands-on practice using PEX fittings, assembling P-traps, and soldering copper pipe. Safety and water-tight assembly techniques are emphasized. Objectives: • Connect PEX tubing using crimping tools and secure fittings. • Perform dry-fit installation of P-traps and understand drainage function. • Solder copper joints to create watertight seals. • Identify and safely handle essential plumbing tools and materials.	2 weeks
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