

Wallenpaupack Area School District

COURSE: Home Maintenance and Repair

GRADE LEVEL: 10-12

LENGTH OF COURSE: 90days/1 Semester

TEXT: Modern Carpentry

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COURSE DESCRIPTION:

Home Maintenance and Repair is a hands-on intensive program intended for students who are not pursuing a career in the building trades. The student should want to obtain a working knowledge of home construction principles and theories while developing a skill level through manipulating materials and tools. The course is designed to include masonry, carpentry, wiring, and plumbing. Typical projects include masonry walls, pavers patio & walkways, rough framing, finish carpentry, simple and complex wiring circuits, and basic plumbing installations and repair.

CURRICULUM WRITING TEAM:

Kevin McCue

DATE OF REVISION:

2007

Wallenpaupack Area School District

Course: Home Maintenance and Repair

Unit: Shop Safety

Grade Level: Grade 10-12

PA Standards: 13.1
13.2
13.3
13.4

Topics:	Skills:
Orientation <ul style="list-style-type: none">• Shop Layout• Shop Rules• Shop Requirements• Course Goals• Grading and Attendance• Competency Based Education	Demonstrate knowledge of safety practices in the use of hand tools, power equipment, and in performing job tasks and procedures
Activities:	Performance Assessments:
Lecture Shop demonstration View Smart board presentation	Written Test

Wallenpaupack Area School District

Course: Home Maintenance and Repair

Unit: Orientation

Grade Level: 10-12

PA Standards: 13.1
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13.4

Topics:	Skills:
Shop Layout Shop Rules Shop Requirements Course Goals Grading and Attendance Competency Based Education	Cognitive and Manipulative Development Active listening strategies Drawing inferences Following directions
Activities:	Performance Assessments:
Lecture Shop demonstration View Smart board presentation	Oral Questioning Written Test

Wallenpaupack Area School District

Course: Home Maintenance and Repair

Unit: Safety

Grade Level: 10-12

PA Standards: 13.1
13.2
13.3
13.4

Topics:	Skills:
Safety <ul style="list-style-type: none">• With hand tools• With power tools• With equipment• With clothing• Fire and electricity• As applied to conduct• With flammable liquids• Tool care and maintenance	Demonstrate knowledge of safety practices in the use of hand tools, power equipment, and in performing job tasks and procedures
Activities:	Performance Assessments:
Lecture Shop demonstration View Smart board presentation	Oral Questioning Written Test

Wallenpaupack Area School District

Course: Home Maintenance and Repair

Grade Level: 10-12

Unit: Masonry

PA Standards: 13.1
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13.4

Topics:	Skills:
<p>Application</p> <ul style="list-style-type: none"> • Tools and materials • Mix mortar • Lay stretcher • Build corner leads • Check elevations • Install anchor bolts • Crawl space construction • Basement construction • Brick veneer 	<p>Understand how to lay out building lines Identify and properly use the 3-4-5 method to lay out batter boards Recognize and understand different foundation systems Use tools and materials to properly lay out forms for footings Identify and understand the components and proper application of concrete</p> <ul style="list-style-type: none"> • Footings • Slabs • Walls • Floors <p>Learn how to properly mix mud and lay it out with a trowel</p> <ul style="list-style-type: none"> • Trowel work • Laying on block <p>Understand the workings of concrete block walls</p> <ul style="list-style-type: none"> • Measure and erect <ul style="list-style-type: none"> ○ Corner leads ○ Walls
Activities:	Performance Assessments:
<p>Lecture View Smart board presentation Board demonstrations Open discussion Class debate Guided practice Shop demonstration Supervised shop work Group projects and individual projects Cooperative learning groups Homework</p>	<p>Shop Observation Quizzes Oral Questioning Written Test</p>

Wallenpaupack Area School District

Course: Home Maintenance and Repair

Unit: Masonry

Grade Level: 10-12

PA Standards: 13.1
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Topics:	Skills:
Pavers	Identify the differences in pavers Understand how to properly level and frame out for work sight Recognize the techniques for cutting and laying pavers
Activities:	Performance Assessments:
Lecture View Smart board presentation Board demonstrations Open discussion Class debate Guided practice Shop demonstration Supervised shop work Group projects and individual projects Cooperative learning groups Homework	Shop Observation Quizzes Oral Questioning Written Test

Wallenpaupack Area School District

Course: Home Maintenance and Repair

Grade Level: 10-12

Unit: Tools

PA Standards: 13.1
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13.4

Topics:	Skills:
<p>Hand tools</p>	<p>Know hand tool safety Understand how to properly use measuring and layout tools</p> <ul style="list-style-type: none"> • Squares • Marking Gauges • Leveling Instruments • Measuring tools <p>Understand how to properly use and identify cutting tools</p> <ul style="list-style-type: none"> • Saws • Planing Smoothing and Shaping tools • Drilling and boring tools • Fastening tools and their components • Prying and clamping tools <p>Understand how to properly store tools Identify proper care and maintenance of tools</p>
Activities:	Performance Assessments:
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Course: Home Maintenance and Repair

Grade Level: 10-12

Unit: Tools

PA Standards: 13.1
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Topics:	Skills:
<p>Power Tools</p>	<p>Know power tool safety Understand how to properly use and identify power tools Identify electrical/shock safety Understand how to properly use and identify</p> <ul style="list-style-type: none"> • Circular saw • Saber saw • Chain saws • Compound Miter • Table Saws • Portable drills • Rotary hammer • Hammer • Power planes • Routers • Joiners • Sanders <ul style="list-style-type: none"> ○ Orbital ○ Drum ○ Disc
Activities:	Performance Assessments:
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Wallenpaupack Area School District

Course: Home Maintenance and Repair
Unit: Framing

Grade Level: 10-12

PA Standards: 13.1
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 13.4

Topics:	Skills:
<p>Floor Framing</p> <ul style="list-style-type: none"> • Sub-floor 	<p>Understand and recognize proper techniques for framing</p> <ul style="list-style-type: none"> • Girders and beams <ul style="list-style-type: none"> ○ Calculate the size for girders • Posts and columns <p>Recognize how to frame over girders and beams</p> <p>Explain proper sill construction</p> <ul style="list-style-type: none"> • Installation <p>Determine how to lay out floor joists</p> <ul style="list-style-type: none"> • Know how to cut floor joists • Understand how to install joists • Bridging <p>Understand proper framing openings</p> <p>Interpret special framing problems</p> <p>Know how to lay out sub-floors</p> <ul style="list-style-type: none"> • Plywood • Glued floor system
Activities:	Performance Assessments:
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Course: Home Maintenance and

Grade Level: 10-12

Wallenpaupack Area School District

Repair

Unit: Framing

PA Standards: 13.1
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13.4

Topics:	Skills:
<p>Walls Ceiling Framing</p>	<p>Understand and identify the parts of a wall</p> <ul style="list-style-type: none"> • Plates • Studs • Corners • Bracing <p>Comprehend how to build partition intersections</p> <p>Explain and calculate rough openings</p> <ul style="list-style-type: none"> • Windows • Doors <p>Be familiar with proper plate layout</p> <p>Know how to erect wall sections</p> <p>Understand how to properly install Wall Sheathing</p> <p>Describe and apply the basics of ceiling framing</p>
Activities:	Performance Assessments:
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Course: Home Maintenance and

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Wallenpaupack Area School District

Repair

Unit: Framing

PA Standards: 13.1
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Topics:	Skills:
<p>Roof Framing</p>	<p>Understand how to properly use and identify different roof types</p> <ul style="list-style-type: none"> • Gable • Hip • Gambrel • Flat • Shed • Mansard <p>Know the different parts of a roof</p> <ul style="list-style-type: none"> • Rafters <ul style="list-style-type: none"> ○ Common, Hip, Valley • Jacks <ul style="list-style-type: none"> ○ Hip, Valley, Cripple <p>Determine slope and pitch Calculate rafter dimensions Know how to lay out common rafters</p>
Activities:	Performance Assessments:
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Repair

Unit: Framing

PA Standards: 13.1
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Topics:	Skills:
Windows Exterior Doors	Recognize the different types of windows Identify the different parts of a window Calculate and install jamb extensions Know how to install windows Recognize the different types of doors Identify the different parts of a door Understand how to install a pre-hung exterior door unit
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Wallenpaupack Area School District

Repair

Unit: Finishing

PA Standards: 13.1
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Topics:	Skills:
Interior Doors Trim	Recognize the different types of interior doors Identify the different parts of an interior door Know how to install an interior door frame Understand how to properly identify and install door casings Understand how to properly identify and install baseboard and base shoe
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Course: Home Maintenance and Repair

Grade Level: 10-12

Unit: Finishing

PA Standards: 13.1
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13.4

Topics:	Skills:
Stairs	Recognize the different types of stairs Identify the different parts of stairs Calculate stairwell framing Understand different stair design Know how to calculate stair dimensions <ul style="list-style-type: none"> • Stairwell length • Stinger layout • Treads and risers Identify different types of stringers
Activities:	Performance Assessments:
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Wallenpaupack Area School District

Course: Home Maintenance and Repair

Grade Level: 10-12

Unit: Residential Wiring

PA Standards: 13.1
13.2
13.3
13.4

Topics:	Skills:
<p>Electrical Wiring</p> <ul style="list-style-type: none"> • Safety • Tools • Materials • Equipment 	<p>Know electrical safety Understand how to properly use and identify electrical tools, equipment and materials Comprehend how electricity is produced Understand how electricity is distributed Understand basic electrical wiring theory</p>
Activities:	Performance Assessments:
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Wallenpaupack Area School District

Course: Home Maintenance and Repair

Grade Level: 10-12

Unit: Residential Wiring

PA Standards: 13.1
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Topics:	Skills:
<p>Service Entrance Distribution Panels Installing Boxes Simple Circuits</p>	<p>Understand how to properly identify and install service entrance cable</p> <ul style="list-style-type: none"> • Capacities • Codes • Lengths • Conduit <p>Understand how to properly identify and install a distribution panel</p> <ul style="list-style-type: none"> • 100/200 Amp <p>Determine proper box size and location Know how to work with and the correct uses of different gauged Romex Understand how to properly identify and install simple circuits/branch circuits</p>
Activities:	Performance Assessments:
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Wallenpaupack Area School District

Course: Home Maintenance and Repair

Grade Level: 10-12

Unit: Residential Plumbing

PA Standards: 13.1
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Topics:	Skills:
<p style="text-align: center;">Plumbing Systems</p>	<p>Know plumbing safety Comprehend how to use plumbing tools Identify plumbing materials Understand how to properly identify and install simple plumbing systems</p> <ul style="list-style-type: none"> • Water supply • Drainage, waste, venting <p>Know how to connect pipes</p> <ul style="list-style-type: none"> • Copper • PVC • PB <p>Know how to install fixtures</p> <ul style="list-style-type: none"> • Commode • Faucets
Activities:	Performance Assessments:
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